

**AGENDA ITEM**

March 20, 2017

Subject: Two Backhoes

Department: Public Works / Alliance Water Resources

Three bids were solicited for the 2017 Backhoes:

Murphy Tractor      \$86,312.00 each with a 12", 18" and 24" buckets

Foley Equipment      \$94,000.00 each with 24" bucket

Victor L. Phillips      \$87,575.00 each with 24" bucket

Overall lowest bidder and met all specifications is Murphy Tractor for \$172,624.00 for both backhoes. This purchase is budgeted 1/3- 200-5-4100-320, 1/3- 500-5-4401-320, and 1/3 500- 5-4201-320

## SUBMISSION OF BIDS:

Bids must be priced, signed and returned (with all necessary attachments) to the office of the City Clerk by the closing date and time specified.

The bidder must respond to this RFB by submitting all data required herein in order for the bid to be evaluated and considered for award.

Written assurance that the quoted rate/price will be honored for at least 30 days to allow for reasonable and expeditious processing by City staff and the City Council.

Date:

3-2-17

Company Name:

THE VICTOR L. PHILLIPS Co.

Authorized Signature:



Name (please Print):

DERRICK EWAN

Company address:

5430 Hwy 43 S

Doplin Mo 64804

Phone:

417-781-8222

Email:

Cell 417-621-8710

dewan@vipco.com

City Of Nevada  
RFB#2017-26  
Three Backhoes  
(Smaller Backhoe)

3/2/17

We Offer The Following For Your Consideration:

1 Case 580 SN Tier 4 Final Loader Backhoe Equipped With The Following:

- 97 Horse Power Water Cooled Diesel Engine
- Power Shift Transmission With Power Shuttle And Auto Shift
- Out Board Mounted Wet Disc Brakes
- Hydraulic System 41 GPM, 3,450 PSI With Open Center System
- Dual Batteries With Grid Heaters
- 3 Year Advanced Subscription to Case Site Watch
- Rops Enclosed Cab With Two Doors, Heater And Air Conditioner
- Air Ride Cloth Suspension Seat
- Locking DEF Cover, Locking Hydraulic, Fuel Caps And Locking Tool Box
- Operating Weight Is 18,500
- 14 Feet 6 Inches Over Center Backhoe with 4 Feet Extendahoe, Pilot controls With Power Lift
- Universal Pin Grabber Coupler to Pick up John Deere, Cat And Case Buckets
- Single Acting Auxiliary Hydraulics
- 82 Inch 1 yard Loader Bucket With Bolt on Cutting Edge And Extra Cutting Edge
- Auto Ride Control
- 24 Inch Bucket With Additional Set Of Teeth
- Reverse Parallel Loader Linkage
- One Year Unlimited Hours Manufacture Full Machine Warranty
- Two Year 2000 Hours Powertrain Manufacture Warranty

**Price: \$87,575.00**

Optional Prices

- 12 Inch Backhoe Bucket \$900.00
- 18 Inch Backhoe Bucket \$985.00

(Larger Backhoe)

1 Case 590 SN Tier 4 Final Loader Backhoe Equipped With The Following:

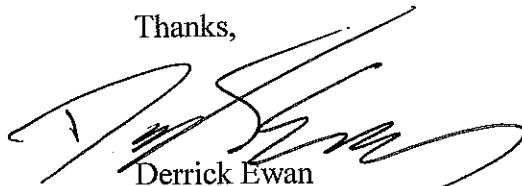
- 110 Horse Power Water Cooled Diesel Engine
- Power Shift Transmission With Power Shuttle And Auto Shift
- Out Board Mounted Wet Disc Brakes
- Hydraulic System 43 GPM, 3,450 PSI With Open Center System
- Dual Batteries With Grid Heaters
- 3 Year Advanced Subscription to Case Site Watch
- Rops Enclosed Cab With Two Doors, Heater And Air Conditioner
- Air Ride Cloth Suspension Seat
- Locking DEF Cover, Locking Hydraulic, Fuel Caps And Locking Tool Box
- Operating Weight Is 19,600
- 15 Feet 6 Inches Over Center Backhoe with 4 Feet Extendahoe, Pilot controls With Power Lift
- Universal Pin Grabber Coupler to Pick up John Deere, Cat And Case Buckets
- Single Acting Auxiliary Hydraulics
- 96 Inch 1.5 yard Loader Bucket With Bolt on Cutting Edge And Extra Cutting Edge
- Auto Ride Control
- 24 Inch Bucket With Additional Set Of Teeth
- Reverse Parallel Loader Linkage

**Price: \$96,797.00**

Extra Options Pricing

• <u>12 Inch bucket</u>	<u>\$900.00</u>
• <u>18 Inch Bucket</u>	<u>\$985.00</u>
• <u>Okada ORV 1300 Backhoe Breaker</u>	<u>\$13,485.00</u>
• <u>Hydraulic Quick Attach Front Loader Coupler</u>	<u>\$5,445.50</u>
• <u>Quick Attach Forks</u>	<u>\$3,250.00</u>
• <u>Over the Bucket Forks</u>	<u>\$1,525.00</u>
• <u>4 X 1 Bucket Pin on</u>	<u>\$4,750.00</u>
• <u>4 X1 Bucket Quick Attach</u>	<u>\$5,985.00</u>

Thanks,



Derrick Ewan

# CASE

CONSTRUCTION

# 590SN

BACKHOE LOADER

TIER 4 FINAL CERTIFIED



## ENGINE

Model	FPT F5BFL413A
Emissions Certification	Tier 4 Final
Type	Diesel 4-stroke, Turbocharged
Cylinders	4
Bore/Stroke	3.90 x 4.33 in (99 x 110 mm)
Displacement	207 in <sup>3</sup> (3.4 L)
Fuel Injection	Direct, high pressure common rail - HPCR
Fuel	Diesel
Engine speeds*	RPM
Rated speed - full load	2200
Low idle	900 - 1000
High idle - no load	2320 - 2430
Horsepower @ 2200 RPM:	
Gross	110 hp (82 kW)
Net	108 hp (81 kW)
Maximum torque @ 1400 RPM:	
Gross	339 lb-ft (460 N-m)
Net	338 lb-ft (459 N-m)
Torque rise at rated speed	29% +/- 5%
Radiator:	
Core type	Square wave
Core size area	486 in <sup>2</sup> (3 145 cm <sup>2</sup> )
Rows of tubes	4
Viscous Fan:	
Style	9 blade viscous suction
Diameter	19.68 in (500 mm)
Ratio	1.4:1
Pump operating angle ratings:	
Side to side	Rated 35°
Fore and aft	Rated 35°
Oil filtration	Replaceable, full flow cartridge

NOTE: \*Engine speeds w/ standard transmission.  
Meets federal emission regulations.

## DRIVETRAIN

Transmission - standard:  
Powershift S-Type, 4F-3R Power Shuttle,  
Synchromesh Transmission w/ hydraulic  
gear shifting

Transmission - optional:  
4F-4R Power Shuttle Synchromesh  
Transmission manual gear shift,  
fully synchronized

Specifications below apply to both Power  
Shuttle and Powershift S-Type transmission  
unless otherwise indicated.

Gear ratios	Forward/Reverse
1st	5.603/4.643
2nd	3.481/2.884
3rd	1.584/1.313
4th	0.793/0.657*

Travel speeds	Forward	Reverse
	mph (kph)	mph (kph)
1st	4.1 (6.6)	4.9 (7.9)
2nd	6.5 (10.5)	7.8 (12.6)
3rd	13.8 (22.3)	16.5 (26.5)
4th	25.2 (40.6)	29.0 (46.7)*

Transmission - optional:  
Powershift H-Type, 4F-3R hydraulic clutch  
shifting w/ auto function

Gear ratios	Forward/Reverse
1st	5.533/4.549
2nd	3.359/2.762
3rd	1.533/1.260
4th	0.811/-

Travel speeds	Forward	Reverse
	mph (kph)	mph (kph)
1st	4.0 (6.4)	4.8 (7.7)
2nd	6.5 (10.5)	7.8 (12.6)
3rd	13.7 (22.0)	16.4 (26.4)
4th	23.0 (37.0)	-

Torque converter ratio	2.4
Differential lock	On-the-go push-button activation

Front 4WD/Rear axle:	
Differential ratio	2.1/2.5
Planetary hub ratio	6.0/6.4
Total reduction ratio	12.8/16.0

Service brakes:	
Individually applied, power assisted, hydraulically actuated, maintenance-free, self-adjusting, outboard mounted, wet disc, 2 per side.	
Total disc area	384 in <sup>2</sup> (0.25 m <sup>2</sup> )

Parking brakes	Trans Mounted spring-applied hydraulic release - SAHR
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NOTE: \*4R not available on Powershift S-type  
Travel speeds at 2306 engine  
RPM specified: w/ 21.0 L x 24.0 tires.

## ELECTRICAL

Voltage	12 Volts, negative ground
Alternator	160 amp
Battery	850 cold-cranking amps
Opt. batteries - 2	850 cold-cranking amps
Power plugs - 2	30 amps total

## OPERATOR ENVIRONMENT

ROPS/FOPS certified protective canopy;  
Anti-vandalism cover for dash - w/ canopy only;  
Rear fenders extensions; Coat hook w/ garment  
strap; Interior rearview mirror, convex  
3.54 in (90 mm) wide x 10.83 in (275 mm) high;  
Non-suspension seat - 180° swivel - Vinyl; 2 in  
(50 mm) retractable seat belt; Cup holder/storage  
tray mounted on left-hand fender; Right-hand  
storage compartment w/ lid.

Gauges:

Engine water temperature; Converter oil  
temperature; Fuel level; Tachometer/  
hourmeter; DEF level.

Warning lights:

Air cleaner restriction; Alternator; A/C high  
pressure; Cold start; Engine oil pressure;  
Hydraulic oil filter bypass; Parking brake  
engagement; Low fuel; Water in fuel; Low DEF.

Audible alarms w/ diagnostics:

Coolant temperature; Engine oil pressure;  
Parking brake engagement; Converter oil  
temperature; Shuttle engagement/seat  
position; Backup alarm; Low DEF.

Horn Dual switched front and rear

## OPERATING WEIGHT

Configuration - SAE Transport:

No Operator, 4:1 Loader Bucket, E-hoe, Cab  
w/ Heat and AC, Ride Control, Eco Mode,  
Heavy Lift, Fully fueled, 24 in HD BH Bucket  
4 WD, Boom Guard, Big Front Counterweight,  
Quick Couple BH, BH aux., Pilot BH Controls,  
Galaxy 14-17.5 @ 50 psi front tires Goodyear  
21 L - 24 @ 28 psi Rear Tires.

20,532 lb (9 309 kg)

Add-on weights:

Cab-over canopy	309 lb (140 kg)
Fabricated stabilizer pads	141 lb (64 kg)
Counterweights	700 lb (318 kg)
	1,100 lb (500 kg)
Extendahoe®	335 lb (152 kg)
4WD w/ driveshaft guard	393 lb (178 kg)

## HYDRAULICS

### Pump:

Bosch Rexroth Series 31 Variable Displacement Axial Piston Pump, dual mode torque regulation, mode selected by solenoid

### Main relief pressure:

Standard	3,450 +/- 50 psi (238 +/- 3.5 bar)
Power Lift	3,625 +/- 50 psi (250 +/- 3.5 bar)

### Filtration:

7-micron, full flow replaceable cartridge on return line, condition indicator light for filter.

### Oil cooler

Heavy-duty

### Loader flow @ rated engine RPM:

43 gpm @ 2,340 psi  
(162.6 L/min @ 161 bar)

### Loader control valve w/ pilot or manual backhoe controls:

Two or three-spool closed center sectional control valve. Single lever manual control for lift and tilt functions. The three-spool valve uses a proportional Electro-Hydraulic control for the auxiliary function. The lift lever has a positive hold "Float" position and a "return-to-dig" feature.

### Loader auxiliary hydraulics w/ proportional thumb switch w/ detent on loader control handle:

0 to 43 gpm (0 to 162.6 L/min)

### Backhoe flow @ rated engine RPM:

43 gpm @ 3,100 psi  
(162.6 L/min @ 214 bar)

### Manual backhoe control valve:

Six or seven-spool monoblock open center control valve. Features "Pro-Control" which includes custom designed spools for each individual function along w/ "swing cushioning" valve for zero-wag swing control. Basic control valve has an open center parallel circuit for all functions.

### Pilot backhoe control valve:

Six, seven, or eight spool sectional closed center control valve. Features "Pro-Control" which includes custom designed spools for each individual function along w/ "swing cushioning" valve for zero-wag swing control. Basic control valve is closed center, w/ circuits in parallel w/ a post-compensated, flow sharing feature for simultaneous operation of all circuits.

### Unidirectional auxiliary hydraulics:

Unidirectional hydraulic valve is equipped w/ an adjustable LS relief valve to control attachment pressure and a 6 position flow control selector for 6 detented, distinct flow settings.

### Actuation:

Manual backhoe controls – cab floor pedal  
Pilot controls – left-hand joystick

### Bidirectional auxiliary hydraulics\*:

#### Actuation:

Activate the bidirectional switch located on the rear console  
Manual shift – bidirectional linkage on far right of backhoe tower  
Pilot controls – left-hand joystick.

NOTE: \*Available w/ Combo Aux. Hyd. option.

## SERVICE CAPACITIES

Fuel tank	35.0 gal (132.0 L)
DEF tank	3.6 gal (13.5 L)
Hydraulic system:	
Total	138 qt (130.7 L)
w/ Extendahoe®	144 qt (135.7 L)
Reservoir w/ filter	55 qt (52.4 L)
Reservoir w/o filter	53 qt (50.5 L)
Transmission – total system:	
2WD Standard	18 qt (17.0 L)
2WD Powershift S-Type	23 qt (21.7 L)
4WD Standard	21 qt (19.4 L)
4WD Powershift S-Type	22 qt (20.7 L)
4WD Powershift H-Type	19 qt (18.0 L)

### Front axle:

2WD each hub	0.8 qt (0.8 L)
4WD Differential	9.1 qt (8.6 L)
4WD Planetarys – each	1.1 qt (1.0 L)

### Rear axle:

Differential and planetarys	14.4 qt (13.6 L)
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### Engine oil w/ filter

8.5 qt (8.0 L)

### Cooling system:

w/ heater	19.0 qt (18.0 L)
w/o heater	18.3 qt (17.3 L)

### Window washer reservoir

3.0 qt (2.8 L)

## OTHER SPECIFICATIONS

### Front tires:

2WD	14.0 L x 17.5, 10-ply Industrial Rib
4WD	14.0 L x 17.5, 10-ply SGL SS

### Rear tires:

2/4WD	21.0 L x 24.0, 10-ply R4
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### Loader:

Bucket position indicator; Lifting lugs on standard bucket; Single lever control w/ self-leveling and return-to-dig; Hand operated clutch disconnects on loader and shift levers, single lever 4-function loader control: lift, dump, clutch cut-out, differential lock.

### Turning radius\*: Curb to Curb

#### 2WD:

Brakes on	11 ft 6 in (3.55 m)
Brakes off	12 ft 8 in (3.86 m)

#### 4WD – engaged:

Brakes on	12 ft 6 in (3.81 m)
Brakes off	14 ft 4 in (4.36 m)

#### 4WD – disengaged:

Brakes on	11 ft 8 in (3.55 m)
Brakes off	12 ft 8 in (3.86 m)

### Backhoe:

Over center design, Fabricated "S" boom; Pro Control System; Dipperstick integrated serrated gripper teeth; Case mechanical coupler; Power Lift.

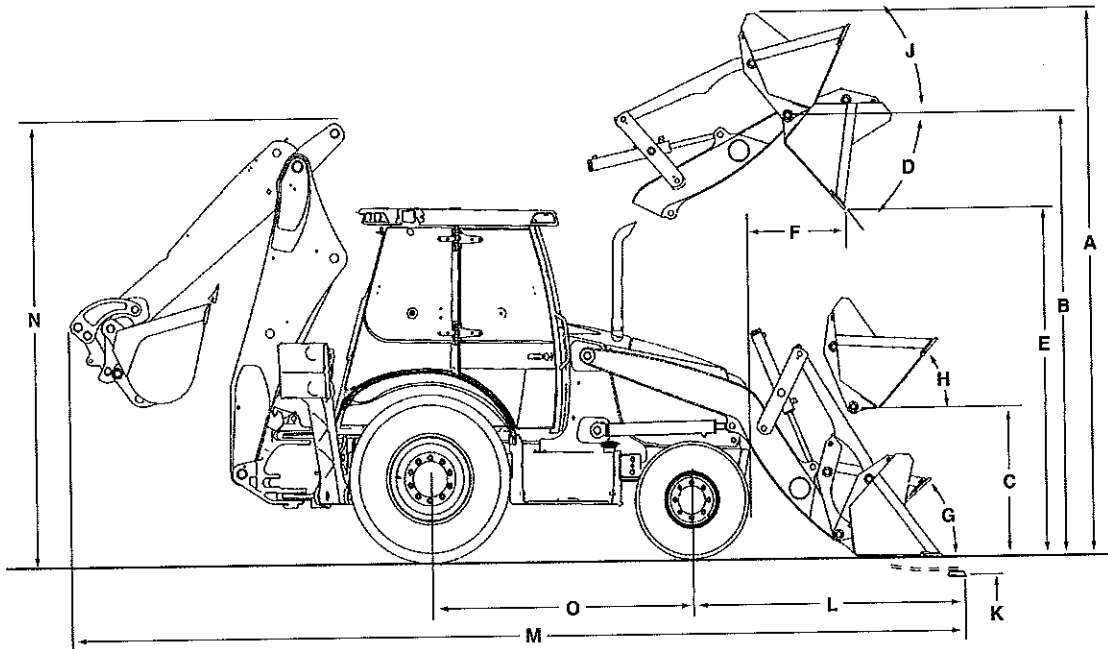
NOTE: \*Turning radius dimensions curb to curb w/ 21.0 L x 24.0 rear tires.

## LOADER BUCKET SIZES

Type	Width	Weight	Struck	Heaped Capacity
Long Lip Bucket with lift points and bolt-on cutting edge	93 in (2.36 m)	1,188 lb (539 kg)	1.1 yd <sup>3</sup> (0.84 m <sup>3</sup> )	1.3 yd <sup>3</sup> (0.99 m <sup>3</sup> )
	96 in (2.44 m)	1,415 lb (642 kg)	1.27 yd <sup>3</sup> (0.97 m <sup>3</sup> )	1.5 yd <sup>3</sup> (1.15 m <sup>3</sup> )
4 IN 1® Bucket	93 in (2.36 m)	1,685 lb (764 kg)	1.0 yd <sup>3</sup> (0.76 m <sup>3</sup> )	1.20 yd <sup>3</sup> (0.92 m <sup>3</sup> )

## BACKHOE BUCKET SIZES

Type	Width	Weight	Heaped Capacity
Universal Buckets	12 in (305 mm)	295 lb (134 kg)	3.40 ft <sup>3</sup> (0.10 m <sup>3</sup> )
	18 in (457 mm)	356 lb (162 kg)	5.30 ft <sup>3</sup> (0.15 m <sup>3</sup> )
	24 in (610 mm)	427 lb (194 kg)	7.70 ft <sup>3</sup> (0.22 m <sup>3</sup> )
	30 in (762 mm)	489 lb (222 kg)	10.20 ft <sup>3</sup> (0.29 m <sup>3</sup> )
	36 in (914 mm)	552 lb (251 kg)	12.70 ft <sup>3</sup> (0.36 m <sup>3</sup> )
High Capacity Buckets	24 in (610 mm)	447 lb (203 kg)	8.50 ft <sup>3</sup> (0.24 m <sup>3</sup> )
	30 in (762 mm)	502 lb (228 kg)	10.60 ft <sup>3</sup> (0.30 m <sup>3</sup> )



Line drawings are for illustrative purpose only and may not be exact representation of unit.

#### LOADER DIMENSIONS

	Long Lip Bucket	4 IN 1 <sup>®</sup> Bucket
A. Overall operating height -- fully raised	13 ft 11 in (4.24 m)	13 ft 10 in (4.22 m)
Height to:		
B. Bucket hinge pin fully raised	11 ft 6 in (3.50 m)	11 ft 6 in (3.50 m)
C. Bucket hinge pin at SAE carry	12.8 in (325 mm)	12.8 in (325 mm)
D. Dump angle at full height	45°	45°
E. Dump clearance at full height, 45° dump:		
Bucket	8 ft 11 in (2.72 m)	9 ft 1 in (2.77 m)
Clam open	—	9 ft 10 in (3.01 m)
F. Dump reach at full height, 45° dump -- from bumper:		
Bucket	29.2 in (741 mm)	27.8 in (707 mm)
Clam open	—	13.8 in (351 mm)
Bucket rollback:		
G. @ Groundline	40°	41°
H. @ SAE carry	46°	46°
J. @ Full height	Adjustable	Adjustable
K. Digging depth below grade:		
Bucket flat	6.2 in (157 mm)	5.9 in (150 mm)
Clam open -- dozing	—	3.5 in (89 mm)
L. Reach from front axle centerline -- bucket on ground	6 ft 7 in (2.05 m)	6 ft 5 in (1.99 m)
Lift capacity to full height -- calculated values	8,202 lb (3 721 kg)	7,807 lb (3 541 kg)
Breakout force -- calculated values:		
Lift cylinders	11,463 lb (5 099 daN)	11,225 lb (4 993 daN)
Dump cylinders	12,776 lb (5 683 daN)	13,717 lb (6 102 daN)
Bucket cutting edge width	92.7 in (2.36 m)	93.0 in (2.36 m)
Maximum grading angle	106°	106°
Maximum clam opening	—	38.3 in (972 mm)
Moldboard height	—	36.8 in (934 mm)
Raising time to full height	3.7 sec	3.7 sec
Bucket dumping time	2.0 sec	2.0 sec
Lowering time:		
Power down	2.5 sec	2.5 sec
Return-to-dig	3.8 sec	3.8 sec
Clam:		
Open time	—	1.3 sec
Close time	—	1.1 sec

NOTE: Loader dimensions taken with 4WD.

## DIMENSIONS

	Standard Backhoe	Extendahoe®	
		Retracted	Extended
<b>M. Overall transport length:</b>			
Long Lip bucket	23 ft 10 in (7.25 m)	23 ft 10 in (7.25 m)	—
4 IN 1° bucket	23 ft 7 in (7.20 m)	23 ft 7 in (7.20 m)	—
Overall transport width	7 ft 9 in (2.36 m)	7 ft 9 in (2.36 m)	—
<b>Height:</b>			
To top of canopy	8 ft 9 in (2.68 m)	8 ft 9 in (2.68 m)	8 ft 9 in (2.68 m)
To top of cab	8 ft 11 in (2.71 m)	8 ft 11 in (2.71 m)	8 ft 11 in (2.71 m)
To top of exhaust stack	8 ft 9 in (2.67 m)	8 ft 9 in (2.67 m)	8 ft 9 in (2.67 m)
<b>N. Transport</b>	11 ft 7 in (3.54 m)	11 ft 8 in (3.54 m)	—
Ground clearance at backhoe frame	14.2 in (360 mm)	14.2 in (360 mm)	14.2 in (360 mm)
Angle of departure	18.7°	18.7°	18.7°
<b>Front wheel tread:</b>			
14.0 L x 17.5 Industrial Rib	74.3 in (1.89 m)	74.3 in (1.89 m)	—
14.0 L x 17.5	74.3 in (1.89 m)	74.3 in (1.89 m)	—
<b>Rear wheel tread:</b>			
21.0 L x 24.0	69.6 in (1.77 m)	69.6 in (1.77 m)	—
<b>O. Wheelbase:</b>			
2WD	84.0 in (2.13 m)	84.0 in (2.13 m)	—
4WD	84.5 in (2.15 m)	84.5 in (2.15 m)	—

NOTE: Dimensions taken with 21.0 L x 24.0 rear tires and 14.5/75.0 L x 16.1 front tires except that data marked 4WD is taken with 14.0 L x 17.5 front tires.

## CYLINDERS

	Bore Diameter	Rod Diameter	Stroke	Closed Length
<b>Loader:</b>				
Lift – 2	3.50 in (88.9 mm)	1.875 in (47.6 mm)	29.13 in (740.0 mm)	41.54 in (1 055.0 mm)
Dump – 2	3.25 in (82.6 mm)	1.75 in (44.5 mm)	20.33 in (516.5 mm)	30.78 in (781.8 mm)
4 IN 1° clam – 2	3.00 in (76.2 mm)	1.75 in (44.5 mm)	9.08 in (230.6 mm)	19.62 in (498.3 mm)
<b>Backhoe:</b>				
Boom	5.50 in (139.7 mm)	2.75 in (69.9 mm)	40.57 in (1 030.5 mm)	57.05 in (1 449.0 mm)
Dipperstick	5.25 in (133.4 mm)	2.75 in (69.9 mm)	23.53 in (597.7 mm)	38.49 in (977.7 mm)
Bucket	3.50 in (88.9 mm)	2.50 in (63.5 mm)	38.95 in (989.4 mm)	51.78 in (1 315.2 mm)
Extendahoe®	3.00 in (76.2 mm)	1.75 in (44.5 mm)	48.03 in (1 220.0 mm)	64.02 in (1 626.0 mm)
Swing – 2	4.00 in (101.6 mm)	2.00 in (50.8 mm)	11.50 in (292.0 mm)	24.44 in (620.8 mm)
Stabilizer – 2	5.25 in (133.4 mm)	2.50 in (63.5 mm)	20.40 in (518.1 mm)	33.57 in (852.7 mm)

## AXLE RATINGS

	Front – 2WD	Rear	Front – 4WD
Maximum static	65,506 lb (29 713 kg)	70,848 lb (32 136 kg)	67,883 lb (30 791 kg)
Dynamic operating	44,261 lb (20 077 kg)	49,494 lb (22 450 kg)	47,426 lb (21 512 kg)
Static operating	17,704 lb (8 031 kg)	19,798 lb (8 980 kg)	18,969 lb (8 604 kg)
Oscillation – front axle	22° total – 11° each side	—	22° total – 11° each side



**BACKHOE LIFT CAPACITIES**

Standard Backhoe			Extendahoe®			
Boom Lift			Retracted		Extended	
	Standard	Power Lift	Standard	Power Lift	Standard	Power Lift
	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)
+18 ft (5.50 m)	—	—	—	—	2,548 (1 156)	2,710 (1 229)
+16 ft (4.87 m)	—	—	—	—	2,783 (1 262)	2,961 (1 343)
+14 ft (4.27 m)	3,942 (1 788)	4,177 (1 895)	3,688 (1 673)	3,923 (1 779)	2,967 (1 346)	3,156 (1 431)
+12 ft (3.66 m)	4,160 (1 887)	4,409 (2 000)	3,898 (1 768)	4,147 (1 881)	3,037 (1 378)	3,231 (1 465)
+10 ft (3.05 m)	4,204 (1 907)	4,456 (2 021)	3,937 (1 786)	4,188 (1 900)	3,051 (1 384)	3,246 (1 472)
+8 ft (2.44 m)	4,180 (1 896)	4,430 (2 009)	3,908 (1 773)	4,158 (1 886)	3,052 (1 384)	3,247 (1 473)
+6 ft (1.83 m)	4,128 (1 873)	4,374 (1 984)	3,853 (1 748)	4,099 (1 859)	3,037 (1 378)	3,231 (1 466)
+4 ft (1.22 m)	4,064 (1 843)	4,305 (1 953)	3,785 (1 717)	4,027 (1 827)	3,011 (1 366)	3,203 (1 453)
+2 ft (0.61 m)	4,001 (1 815)	4,239 (1 923)	3,720 (1 687)	3,957 (1 795)	2,983 (1 353)	3,174 (1 440)
Ground Level	3,942 (1 788)	4,175 (1 894)	3,657 (1 659)	3,891 (1 765)	2,970 (1 347)	3,160 (1 433)
-2 ft (0.61 m)	3,893 (1 766)	4,123 (1 870)	3,606 (1 635)	3,836 (1 740)	2,946 (1 336)	3,134 (1 422)
-4 ft (1.22 m)	3,863 (1 752)	4,091 (1 856)	3,572 (1 620)	3,800 (1 724)	2,929 (1 329)	3,116 (1 413)
-6 ft (1.83 m)	3,861 (1 751)	4,088 (1 854)	3,565 (1 617)	3,793 (1 720)	2,924 (1 326)	3,111 (1 411)
-8 ft (2.44 m)	3,910 (1 774)	4,141 (1 878)	3,609 (1 637)	3,839 (1 741)	2,941 (1 334)	3,129 (1 419)
-10 ft (3.05 m)	4,088 (1 854)	4,329 (1 964)	3,776 (1 713)	4,017 (1 822)	2,985 (1 354)	3,175 (1 440)
-12 ft (3.66 m)	4,245 (1 925)	4,494 (2 038)	3,900 (1 769)	4,149 (1 882)	3,102 (1 407)	3,300 (1 497)
-14 ft (4.27 m)	—	—	—	—	3,307 (1 500)	3,519 (1 596)
Dipper Lift	—	—	—	—	4,312 (1 956)	4,312 (1 956)
+16 ft (4.87 m)	—	—	—	—	4,020 (1 823)	4,020 (1 823)
+14 ft (4.27 m)	6,102 (2 768)	6,102 (2 768)	5,853 (2 655)	5,853 (2 655)	5,252 (2 382)	5,252 (2 382)
+12 ft (3.66 m)	6,651 (3 017)	6,651 (3 017)	6,409 (2 907)	6,409 (2 907)	4,849 (2 200)	4,849 (2 200)
+10 ft (3.05 m)	6,891 (3 126)	6,891 (3 126)	6,650 (3 016)	6,650 (3 016)	4,945 (2 243)	4,945 (2 243)
+8 ft (2.44 m)	7,147 (3 243)	7,147 (3 243)	6,903 (3 131)	6,903 (3 131)	4,670 (2 118)	4,670 (2 118)
+6 ft (1.83 m)	7,178 (3 256)	7,178 (3 256)	6,928 (3 142)	6,928 (3 142)	4,424 (2 007)	4,424 (2 007)
+4 ft (1.22 m)	8,226 (3 731)	8,226 (3 731)	7,953 (3 608)	7,953 (3 608)	5,103 (2 315)	5,103 (2 315)
+2 ft (0.61 m)	—	—	—	—	—	—

NOTE: Boom and Dipper Lift Capacities are rated per SAE J31 and are 87% of the maximum hydraulic lift force available with the specified options.

**BACKHOE OPERATIONAL DATA**

Standard Backhoe		Extendahoe®	
		Retracted	Extended
Digging depth:			
Maximum	15 ft 6 in (4.72 m)	15 ft 6 in (4.72 m)	19 ft 6 in (5.94 m)
Maximum with hi-capacity bucket	16 ft 0 in (4.88 m)	16 ft 0 in (4.88 m)	20 ft 0 in (6.10 m)
2 ft (610 mm) flat bottom	15 ft 5 in (4.69 m)	15 ft 5 in (4.69 m)	19 ft 5 in (5.92 m)
8 ft (2.44 m) flat bottom	14 ft 5 in (4.40 m)	14 ft 5 in (4.40 m)	18 ft 8 in (5.63 m)
Overall reach from:			
Rear axle centerline	23 ft 3 in (7.10 m)	23 ft 3 in (7.10 m)	27 ft 2 in (8.28 m)
Swing pivot	19 ft 7 in (5.98 m)	19 ft 7 in (5.98 m)	23 ft 6 in (7.17 m)
Loading height	13 ft 1 in (4.00 m)	13 ft 1 in (4.00 m)	15 ft 9 in (4.81 m)
Loading reach – dipper retracted	5 ft 1 in (1.56 m)	5 ft 1 in (1.56 m)	8 ft 1 in (2.47 m)
Swing arc	180°	180°	180°
Bucket rotation:			
Mechanical coupler	198.0°	198.0°	198.0°
Hydraulic coupler – Extendahoe® dipper	194.8°	194.8°	194.8°
Hydraulic coupler – standard dipper	198.0°	198.0°	198.0°
Stabilizer spread – operating – centers:			
Flip pad	10 ft 9 in (3.26 m)	10 ft 9 in (3.26 m)	10 ft 9 in (3.26 m)
Cast pad	11 ft 1 in (3.37 m)	11 ft 1 in (3.37 m)	11 ft 1 in (3.37 m)
Digging force:			
Bucket cylinder – SAE rated 3,460 psi	15,132 lb (67 310 N)	15,132 lb (67 310 N)	15,132 lb (67 310 N)
Bucket cylinder – Power Lift	15,853 lb (70 520 N)	15,853 lb (70 520 N)	15,853 lb (70 520 N)
Dipper cylinder – SAE rated 3,460 psi	10,575 lb (47 041 N)	10,575 lb (47 041 N)	7,392 lb (32 882 N)
Dipper cylinder – Power Lift	11,080 lb (49 285 N)	11,080 lb (49 285 N)	7,744 lb (34 450 N)
Leveling angle:			
Flip pad	11.2°	11.2°	11.2°
Cast pad	12.0°	12.0°	12.0°

NOTE: Lift capacities apply straight to the rear of prime mover, 4WD equipped with 24 in (610 mm) Universal HD trenching bucket and Case coupler except as noted.

## STANDARD EQUIPMENT

### OPERATOR ENVIRONMENT

See page 1

### ENGINE

FPT F5BFL413A diesel  
Selective Catalytic Reduction – SCR  
Full flow engine oil filter  
Air cleaner – replaceable dry type  
with radial seal  
Aspirated air cleaner  
Fuel filter with water trap  
Radiator with de-aeration bottle  
Antifreeze to -34° F (-37° C)  
Electronic throttles – foot and rotary hand  
Self adjusting belt  
High Pressure Common Rail computer  
controlled injection with diagnostic features

### DRIVETRAIN

Powershift S-Type transmission, 4F-3R  
Power Shuttle Synchronesh Transmission  
with hydraulic gear shifting controller and  
kick down in loader control valve lever –  
2WD or 4WD and auto function  
Front axle:  
2WD heavy-duty front axle with  
14.0 L x 17.5 tires with Industrial Rib tread  
4WD heavy-duty mechanically driven front  
axle with 14.0 L x 17.5 tires and drive  
shaft guard  
Rear axle:  
2/4WD heavy-duty outboard planetary drive  
with 21.0 L x 24.0 tires  
Torque converter – 11.8 in (300 mm)  
On-the-go electric 4WD control  
Electric F/R shuttle control  
Electric differential lock control, push-button  
Park brake, spring-applied hydraulic  
release – SAHR

### HYDRAULICS

Ground level remote hydraulic test ports  
Variable displacement axial piston pump  
Pump:  
43 gpm @ 3,000 psi  
(162.6 L/min @ 207 bar)  
Heavy-duty oil cooler  
7-micron, spin on oil filter

### LOADER

See page 2

### BACKHOE

Power Lift  
See page 2

### OTHER

14.0 L x 17.5, 10 PR – 4WD front tires  
21.0 L x 24.0, 10 PR rear tires  
Forward tilt engine hood  
Replaceable, molded front bumpers  
Front/Rear tie downs  
Reflective logos  
Lights – cab and canopy:  
2 front driving  
2 rear tail/stop  
2 front flashers/turn  
2 rear flashers/turn  
Lights – cab only:  
Adjustable halogen work lights – 55 W:  
2 front  
2 side – left and right  
4 rear  
Lights – canopy only:  
Adjustable halogen work lights – 55 W:  
2 front  
2 side – left and right  
4 rear

### TELEMATICS

CASE SiteWatch™ Telematics – includes  
hardware and a 3-yr Advanced  
data subscription

## OPTIONAL EQUIPMENT

### OPERATOR ENVIRONMENT

- Speed selectable Auto Ride Control – 4WD models
- Standard Ride Control – 2WD models
- Comfort Steering with momentary latching switch, two-speed steering pump and 3rd/4th gear cutout
- ROPS/FOPS certified protective cab with rear wipers and floor mat
- Cab Convenience Package containing pull-down sun visor, window washer – front and rear, left-hand storage tray, deluxe interior package, Sound Reduction Package for cab models – levels reduced to 72 dB (A), right-hand threshold storage box
- Air-conditioning for cab models
- Mechanical suspension seat with flip-up armrests, 180° swivel, heated cloth or vinyl, adjustable seat and weight, backrest angle, lumbar and cushion angle
- Air Ride suspension seat with flip-up armrests, 180° swivel, heated, electric height adjustment, adjustable backrest – cab units cloth, canopy units vinyl
- Pull-down sun visor for canopy models
- Radio, AM/FM Stereo/WB, MP3 auxiliary input – cab models
- 3 in (75 mm) seat belt for mechanical and air-suspension seat

### ENGINE

- Cold Weather Starting Aid with dual 12 Volt batteries and glow plugs
- Block heater

### DRIVETRAIN

- Standard Powershuttle, 4F-4R Power Shuttle Synchronmesh transmission
- Powershift H-Type transmission, 4F-3R hydraulic clutch shifting with auto function

### LOADER

- Auxiliary hydraulics for loader-mounted equipment with thumb-operated proportional control
- Hydraulic front quick coupler
- Loader linkage without loader bucket
- Tool portfolio of additional attachments
- Buckets – see page 2

### BACKHOE

- Auxiliary backhoe unidirectional hydraulics
- Auxiliary backhoe combo hydraulics:
  - Hand lever operated for bidirectional manual controls
  - Button operated for pilot controls includes unidirectional and bidirectional
- Auxiliary hydraulics with flow from 0 to 43 gal/min (0 to 162.6 L/min)
- Bolt-on hardened gripper teeth
- Extendahoe®
- Two-lever control – backhoe or Extendahoe®

### Pilot operated control system:

- Fingertip proportional Electro-Hydraulic stabilizer controls
- Thumb-operated proportional Electro-Hydraulic Extendahoe® control
- Thumb-operated horn button
- Thumb-operated auxiliary hydraulic control
- Infinitely adjustable towers
- In-cab switchable “excavator to backhoe” control pattern change Standard dipper

### Flip over stabilizer pads

- Cemetery/Street pads
- Hydraulic bucket coupler
- Universal coupler – CAT/Deere compatible
- Buckets – see page 2

### OTHER

- Front:
  - 14.0 L x 17.5 10 PR
- Rear:
  - 21 L x 24, 10 PR
- Special paint
- Tool box – bolt-on, step-mounted
- Front counterweights:
  - 700 lb and 1,100 lb (318 kg and 500 kg)
- Rotating beacon
- Master disconnect switch and remote jump-start terminals
- Eco-Mode – Detent on backhoe hand throttle, push switch on dash

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590SN

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CASE Construction Equipment is biodiesel-friendly. NOTE: All engines meet current EPA emissions regulations. All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.

Always read the Operator's Manual before operating any equipment. Inspect equipment before using it, and be sure it is operating properly. Follow the product safety signs and use any safety features provided.

# CASE

CONSTRUCTION



# 580SN

BACKHOE LOADER

TIER 4 FINAL CERTIFIED

## ENGINE

Model	FPT F5BFL413B
Emissions Certification	Tier 4 Final
Type	Diesel 4-stroke, Turbocharged
Cylinders	4
Bore/Stroke	3.90 x 4.33 in (99 x 110 mm)
Displacement	207 in <sup>3</sup> (3.4 L)
Fuel injection	Direct, high pressure common rail – HPCR
Fuel	Diesel
Engine speeds*	RPM
Rated speed – full load	2200
Low idle	900 – 1000
High idle – no load	2330 – 2430
Horsepower @ 2200 RPM:	
Gross	97 hp (72 kW)
Net	95 hp (71 kW)
Maximum torque @ 1400 RPM:	
Gross	334 lb-ft (453 N-m)
Net	333 lb-ft (452 N-m)
Torque rise at rated speed	45% +/- 5%
Radiator:	
Core size area	486 in <sup>2</sup> (3 145 cm <sup>2</sup> )
Rows of tubes	4
39° fan:	
Style	9 blade suction
Diameter	19.65 in (499 mm)
Ratio**	1.4:1
Pump operating angle ratings:	
Side to side	Rated 35°
Fore and aft	Rated 35°
Oil filtration	Replaceable, full flow cartridge

NOTE: \*Engine speeds w/ standard transmission.  
Meets federal emission regulations.

\*\*Viscous fan.

## DRIVETRAIN

Transmission – standard:  
4F-4R Power Shuttle Synchromesh  
Transmission manual gear shift,  
fully synchronized

Transmission – optional:  
Powershift S-Type, 4F-3R Power Shuttle,  
Synchromesh Transmission w/ hydraulic  
gear shifting

Specifications below apply to both Power  
Shuttle and Powershift S-Type transmission  
unless otherwise indicated.

Gear ratios	Forward/Reverse
1st	5.603/4.643
2nd	3.481/2.884
3rd	1.584/1.313
4th	0.793/0.657*

Travel speeds	Forward mph (kph)	Reverse mph (kph)
1st	3.8 (6.1)	4.5 (7.3)
2nd	6.0 (9.7)	7.2 (11.6)
3rd	12.8 (20.6)	15.4 (24.7)
4th	24.0 (38.6)	28.8 (46.3)*

Transmission – optional:  
Powershift H-Type, 4F-3R hydraulic clutch  
shifting w/ auto function

Gear ratios	Forward/Reverse
1st	5.533/4.549
2nd	3.359/2.762
3rd	1.533/1.260
4th	0.811/—

Travel speeds	Forward mph (kph)	Reverse mph (kph)
1st	3.9 (6.2)	4.6 (7.4)
2nd	6.3 (10.1)	7.5 (12.1)
3rd	13.3 (21.4)	16.0 (25.7)
4th	23.6 (38.0)	—

Torque converter ratio 2.4

Differential-lock On-the-go  
push-button activation

Front 4WD/Rear axle:	
Differential ratio	2.0/2.5
Planetary hub ratio	6.0/6.4
Total reduction ratio	12.0/16.0

Service brakes:  
Individually applied, power assisted,  
hydraulically actuated, maintenance-free,  
self-adjusting, outboard mounted, wet disc,  
2 per side.  
Total disc area 384 in<sup>2</sup> (0.25 m<sup>2</sup>)

Parking brakes Trans Mounted  
spring-applied hydraulic release – SAHR

NOTE: \*4R not available on Powershift S-Type.  
Travel speeds at 2312 engine  
RPM specified: w/ 19.5 L x 24.0 tires.  
Speeds decrease w/ 17.5 L x 24.0 rear tires.

## ELECTRICAL

Voltage	12 Volts, negative ground
Alternator	160 amp
Battery	850 cold-cranking amps
Opt. batteries – 2	850 cold-cranking amps
Power plugs – 2	30 amps total

## OPERATOR ENVIRONMENT

ROPS/FOPS certified protective canopy;  
Anti-vandalism cover for dash – w/ canopy only;  
Rear fenders extensions; Coat hook w/ garment  
strap; Interior rearview mirror, convex  
3.54 in (90 mm) wide x 10.83 in (275 mm) high;  
Non-suspension seat – 180° swivel – Vinyl; 2 in  
(50 mm) retractable seat belt; Cup holder/storage  
tray mounted on left-hand fender; Right-hand  
storage compartment w/ lid.

### Gauges:

Engine water temperature; Converter oil  
temperature; Fuel level; Tachometer/  
hourmeter; DEF level.

### Warning lights:

Air cleaner restriction; Alternator; A/C high  
pressure; Cold start; Engine oil pressure;  
Hydraulic oil filter bypass; Parking brake  
engagement; Low fuel; Water in fuel; Low DEF.

### Audible alarms w/ diagnostics:

Coolant temperature; Engine oil pressure;  
Parking brake engagement; Converter oil  
temperature; Shuttle engagement/seat  
position; Backup alarm; Low DEF.

Horn Dual switched front and rear

## OPERATING WEIGHT

### Configuration 1 – SAE Transport:

No Operator, GP Loader Bucket, Cab, AC,  
Small Front Counter Weight, 2WD, Full of Fuel,  
SAE Carry T4 Final Engine, Pilot Controls,  
11 L – 16 @ 52 psi front tires, 17.5 L – 24 @  
30 psi rear tires.

17,269 lb (7 883 kg)

### Configuration 2 – SAE Transport:

No Operator, 4:1 Loader Bucket, E-hoe, Cab,  
big front counter weight, Full of Fuel, SAE  
Carry T4 Final Engine, Pilot Controls, Galaxy  
12 x 16.5 @ 50 psi front tires, Soliddeal  
19.5 L – 24 @ 30 psi rear tires.

19,067 lb (8 649 kg)

### Add-on weights:

Cab-over canopy	309 lb (140 kg)
Fabricated stabilizer pads	141 lb (64 kg)
Counterweights	700 lb (318 kg)
Extendahoe®	286 lb (130 kg)
4WD w/ driveshaft guard	283 lb (128 kg)

## HYDRAULICS

### Pump:

Bosch Rexroth Series 31 Variable  
Displacement Axial Piston Pump

### Main relief pressure:

Standard	3,450 +/- 50 psi (238 +/- 3.5 bar)
Power Lift	3,625 +/- 50 psi (250 +/- 3.5 bar)

### Filtration:

7-micron, full flow replaceable cartridge on return line, condition indicator light for filter.

Oil cooler Heavy-duty

### Loader flow @ rated engine RPM:

41 gpm @ 2,340 psi  
(156.2 L/min @ 161 bar)

### Loader control valve w/ pilot or manual

#### backhoe controls:

Two or three-spool closed center sectional control valve. Single lever manual control for lift and tilt functions. The three-spool valve uses a proportional Electro-Hydraulic control for the auxiliary function. The lift lever has a positive hold "Float" position and a "return-to-dig" feature.

### Loader auxiliary hydraulics w/ proportional thumb switch w/ detent on loader control handle:

0 to 41 gpm @ 2,340 psi  
(0 to 156.2 L/min @ 161 bar)

### Backhoe flow @ rated engine RPM:

41 gpm @ 3,100 psi  
(156.2 L/min @ 214 bar)

### Manual backhoe control valve:

Six or seven-spool monoblock open center control valve. Features "Pro-Control" which includes custom designed spools for each individual function along w/ "swing cushioning" valve for zero-wag swing control. Basic control valve has an open center parallel circuit for all functions.

### Pilot backhoe control valve:

Six, seven, or eight spool sectional closed center control valve. Features "Pro-Control" which includes custom designed spools for each individual function along w/ "swing cushioning" valve for zero-wag swing control. Basic control valve is closed center, w/ circuits in parallel w/ a post-compensated, flow sharing feature for simultaneous operation of all circuits.

### Unidirectional auxiliary hydraulics:

Unidirectional hydraulic valve is equipped w/ an adjustable LS relief valve to control attachment pressure and a 6 position flow control selector for 6 detented, distinct flow settings.

### Actuation:

Manual backhoe controls – cab floor pedal  
Pilot controls – left-hand joystick

### Bidirectional auxiliary hydraulics\*:

#### Actuation:

Activate the bidirectional switch located on the rear console  
Manual shift – bidirectional linkage on far right of backhoe tower  
Pilot controls – left-hand joystick.

NOTE: \*Available w/ Combo Aux. Hyd. option.

## SERVICE CAPACITIES

Fuel tank	35.0 gal (132.0 L)
DEF tank	3.6 gal (13.5 L)
Hydraulic system:	
Total	125 qt (118.0 L)
w/ Extendahoe®	131 qt (123.6 L)
Reservoir w/ filter	53 qt (50.5 L)
Reservoir w/o filter	55 qt (52.4 L)
Transmission – total system:	
2WD Standard	18 qt (17.0 L)
2WD Powershift S-Type	23 qt (21.7 L)
4WD Standard	21 qt (19.4 L)
4WD Powershift S-Type	22 qt (20.7 L)
4WD Powershift H-Type	19 qt (18.0 L)

### Front axle:

4WD Differential	8.1 qt (7.7 L)
4WD Planetaries – each	0.5 qt (0.5 L)

### Rear axle:

Differential and planetaries	14.4 qt (13.6 L)
------------------------------	------------------

### Engine oil w/ filter

8.5 qt (8.0 L)

### Cooling system:

w/ heater	19.0 qt (18.0 L)
w/o heater	18.3 qt (17.3 L)

### Window washer reservoir

3.0 qt (2.8 L)

## OTHER SPECIFICATIONS

### Front tires:

2WD	11.0 L x 16.0, 10-ply rating
4WD	12.0 L x 16.5, 8-ply rating

### Rear tires:

2/4WD	19.5 L x 24.0, 10-ply rating
2/4WD	17.5 L x 24.0, 10-ply rating

### Loader:

Bucket position indicator; Lifting lugs on standard bucket; Single lever control w/ self-leveling and return-to-dig; Hand operated clutch disconnects on loader and shift levers, single lever 4-function loader control: lift, dump, clutch cut-out, differential lock.

### Turning radius\*: Curb to Curb:

2WD:	
Brakes on	10 ft 8 in (3.24 m)
Brakes off	12 ft 4 in (3.76 m)
4WD – engaged:	
Brakes on	11 ft 4 in (3.45 m)
Brakes off	13 ft 10 in (4.21 m)
4WD – disengaged:	
Brakes on	11 ft 0 in (3.36 m)
Brakes off	12 ft 3 in (3.72 m)

### Backhoe:

Over center design, Fabricated "S" boom; Pro Control System; Dipperstick integrated serrated gripper teeth; Case mechanical coupler.

NOTE: \*Turning radius dimensions curb to curb w/ 17.5 L x 24.0 rear tires.

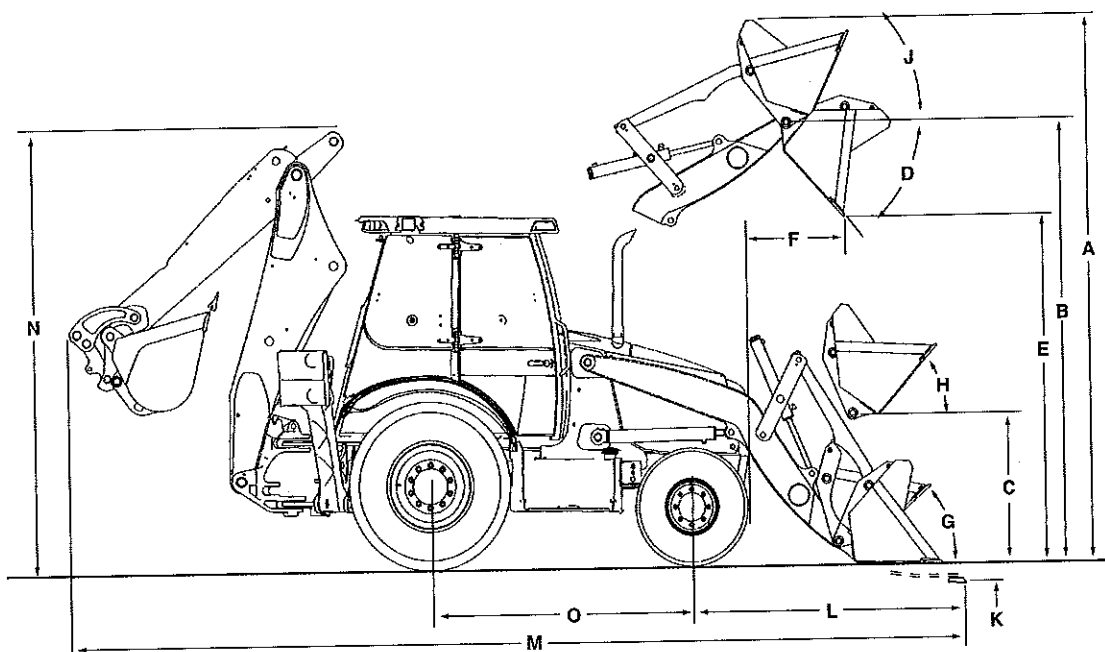
## LOADER BUCKET SIZES

Type	Width	Weight	Struck	Heaped Capacity
Long Lip Bucket:				
without bolt-on edge	82 in (2.08 m)	864 lb (392 kg)	0.88 yd <sup>3</sup> (0.67 m <sup>3</sup> )	1.03 yd <sup>3</sup> (0.79 m <sup>3</sup> )
with bolt-on edge	93 in (2.36 m)	1,188 lb* (539 kg)	1.10 yd <sup>3</sup> (0.89 m <sup>3</sup> )	1.29 yd <sup>3</sup> (0.99 m <sup>3</sup> )
4 IN 1® Bucket with bolt-on edge	82 in (2.08 m)	1,572 lb* (713 kg)	0.85 yd <sup>3</sup> (0.65 m <sup>3</sup> )	1.04 yd <sup>3</sup> (0.80 m <sup>3</sup> )

NOTE: \*Weight of 4 IN 1® bucket includes edges, cylinders and tube lines.

## BACKHOE BUCKET SIZES

Type	Width	Weight	Heaped Capacity
Universal Buckets			
	12 in (305 mm)	295 lb (134 kg)	3.40 ft <sup>3</sup> (0.10 m <sup>3</sup> )
	18 in (457 mm)	356 lb (162 kg)	5.30 ft <sup>3</sup> (0.15 m <sup>3</sup> )
	24 in (610 mm)	427 lb (194 kg)	7.70 ft <sup>3</sup> (0.22 m <sup>3</sup> )
	30 in (762 mm)	489 lb (222 kg)	10.20 ft <sup>3</sup> (0.29 m <sup>3</sup> )
	36 in (914 mm)	552 lb (251 kg)	12.70 ft <sup>3</sup> (0.36 m <sup>3</sup> )
High Capacity Buckets			
	24 in (610 mm)	447 lb (203 kg)	8.50 ft <sup>3</sup> (0.24 m <sup>3</sup> )
	30 in (762 mm)	502 lb (228 kg)	10.60 ft <sup>3</sup> (0.30 m <sup>3</sup> )



Line drawings are for illustrative purpose only and may not be exact representation of unit.

#### LOADER DIMENSIONS

	Long Lip Bucket	4 IN 1 <sup>®</sup> Bucket
A. Overall operating height – fully raised	13 ft 9 in (4.18 m)	13 ft 8 in (4.16 m)
Height to:		
B. Bucket hinge pin fully raised	11 ft 3 in (3.42 m)	11 ft 3 in (3.42 m)
C. Bucket hinge pin at SAE carry	13.6 in (345 mm)	13.6 in (345 mm)
D. Dump angle at full height	47°	47°
E. Dump clearance at full height, 45° dump:		
Bucket	8 ft 10 in (2.69 m)	8 ft 11 in (2.71 m)
Clam open	—	9 ft 8 in (2.96 m)
F. Dump reach at full height, 45° dump – from bumper:		
Bucket	31.5 in (801 mm)	29.1 in (738 mm)
Clam open	—	15.3 in (388 mm)
Bucket rollback:		
G. @ Groundline	42°	42°
H. @ SAE carry	42°	42°
J. @ Full height	Adjustable	Adjustable
K. Digging depth below grade:		
Bucket flat	6.1 in (155 mm)	4.8 in (122 mm)
Clam open – dozing	—	4.1 in (103 mm)
L. Reach from front axle centerline – bucket on ground	6 ft 10 in (2.07 m)	6 ft 8 in (2.03 m)
Lift capacity to full height – calculated values	7,044 lb (3 195 kg)	6,703 lb (3 040 kg)
Breakout force:		
Lift cylinders	9,833 lb (4 460 daN)	9,610 lb (4 359 daN)
Dump cylinders	10,947 lb (4 965 daN)	11,658 lb (5 288 daN)
Bucket cutting edge width	82.5 in (2.09 m)	82.0 in (2.08 m)
Maximum grading angle	114°	114°
Maximum clam opening	—	38.3 in (972 mm)
Moldboard height	—	36.8 in (934 mm)
Raising time to full height – manual/pilot controls	2.6/3.2 sec	2.6/3.2 sec
Bucket dumping time	0.8/1.2 sec	0.8/1.2 sec
Lowering time:		
Power down	1.9/2.1 sec	1.9/2.1 sec
Return-to-dig	2.5/2.2 sec	2.5/2.2 sec
Clam:		
Open time	—	1.1 sec
Close time	—	1.1 sec

NOTE: Loader dimensions taken with 4WD, 19.5 L x 24.0 rear tires.

## DIMENSIONS

	2WD with 17.5 L x 24.0 rear tires	4WD with 19.5 L x 24.0 tires
<b>M. Overall transport length:</b>		
Long Lip bucket with Quick Coupler	23 ft 5 in (7.14 m)	23 ft 4 in (7.10 m)
4 IN 1° bucket with Quick Coupler	23 ft 3 in (7.07 m)	23 ft 1 in (7.04 m)
Long Lip bucket with Straight Links	23 ft 6 in (7.15 m)	23 ft 4 in (7.12 m)
4 IN 1° bucket with Straight Links	23 ft 3 in (7.09 m)	23 ft 2 in (7.06 m)
Overall transport width	7 ft 2 in (2.17 m)	7 ft 2 in (2.17 m)
<b>Height:</b>		
To top of canopy	8 ft 8 in (2.64 m)	8 ft 9 in (2.66 m)
To top of cab	8 ft 9 in (2.68 m)	8 ft 11 in (2.72 m)
To top of exhaust stack	8 ft 5 in (2.58 m)	8 ft 7 in (2.62 m)
<b>N. Transport</b>	10 ft 10 in (3.29 m)	11 ft 1 in (3.37 m)
Ground clearance at backhoe frame	12 in (304 mm)	15.0 in (381 mm)
Angle of departure	15.3°	19.0°
<b>Front wheel tread:</b>		
11.0 L x 16.0	67.5 in (1.72 m)	67.5 in (1.72 m)
12.0 L x 16.5	67.7 in (1.72 m)	67.7 in (1.72 m)
19.5 L x 24.0	61.2 in (1.55 m)	61.2 in (1.55 m)
17.5 L x 24.0	63.1 in (1.60 m)	63.1 in (1.60 m)
<b>Width over tires:</b>		
11.0 L x 16.0	79.3 in (2.02 m)	79.3 in (2.02 m)
12.0 L x 16.5	81.1 in (2.06 m)	81.1 in (2.06 m)
19.5 L x 24.0	81.4 in (2.07 m)	81.4 in (2.07 m)
17.5 L x 24.0	81.7 in (2.07 m)	81.7 in (2.07 m)
<b>O. Wheelbase:</b>		
19.5 L x 24.0	84.0 in (2.13 m)	84.5 in (2.15 m)
17.5 L x 24.0	84.0 in (2.13 m)	84.5 in (2.15 m)

## CYLINDERS

	Bore Diameter	Rod Diameter	Stroke	Closed Length
<b>Loader:</b>				
Lift – 2	3.25 in (82.6 mm)	1.75 in (44.5 mm)	28.86 in (733.0 mm)	42.95 in (1 062.0 mm)
Dump – 2	3.00 in (76.2 mm)	1.50 in (38.1 mm)	20.33 in (516.5 mm)	29.90 in (759.5 mm)
4 IN 1° clam – 2	3.00 in (76.2 mm)	1.75 in (44.5 mm)	9.08 in (230.6 mm)	19.62 in (498.3 mm)
<b>Backhoe:</b>				
Boom	5.00 in (127.0 mm)	2.50 in (63.5 mm)	38.25 in (971.6 mm)	52.82 in (1 341.6 mm)
Dipperstick	4.75 in (120.7 mm)	2.50 in (63.5 mm)	25.14 in (628.5 mm)	39.65 in (1 007.0 mm)
Bucket	3.50 in (88.9 mm)	2.50 in (63.5 mm)	35.35 in (897.9 mm)	48.17 in (1 223.6 mm)
Extendahoe®	3.00 in (76.2 mm)	1.75 in (44.5 mm)	42.05 in (1 068.0 mm)	56.22 in (1 428.0 mm)
Swing – 2	4.00 in (101.6 mm)	2.00 in (50.8 mm)	11.50 in (292.0 mm)	24.44 in (620.8 mm)
Stabilizer – 2	4.50 in (114.3 mm)	2.25 in (57.2 mm)	21.37 in (542.9 mm)	33.87 in (860.2 mm)

## AXLE RATINGS

	Front – 2WD	Rear	Front – 4WD
Maximum static	70,821 lb (32 124 kg)	90,145 lb (40 889 kg)	64,613 lb (29 308 kg)
Dynamic operating	44,261 lb (20 076 kg)	56,200 lb (25 492 kg)	39,328 lb (17 839 kg)
Static operating	17,704 lb (8 030 kg)	22,480 lb (10 197 kg)	15,732 lb (7 136 kg)
Oscillation – front axle	22° total – 11° side to side	—	22° total – 11° side to side

# BACKHOE LIFT CAPACITIES

Boom Lift	Standard Backhoe		Extendahoe®			
	Standard	Power Lift	Retracted		Extended	
			Standard	Power Lift	Standard	Power Lift
	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)	Lift Capacity lb (kg)
+16 ft (4.87 m)	—	—	—	—	2,115 (959)	2,298 (1 043)
+14 ft (4.27 m)	3,039 (1 378)	3,285 (1 490)	2,837 (1 287)	3,083 (1 398)	2,395 (1 086)	2,603 (1 181)
+12 ft (3.66 m)	3,413 (1 548)	3,691 (1 674)	3,201 (1 452)	3,479 (1 578)	2,536 (1 151)	2,757 (1 250)
+10 ft (3.05 m)	3,499 (1 587)	3,784 (1 716)	3,281 (1 488)	3,566 (1 618)	2,593 (1 176)	2,818 (1 278)
+8 ft (2.44 m)	3,485 (1 581)	3,768 (1 709)	3,263 (1 480)	3,546 (1 608)	2,564 (1 163)	2,786 (1 264)
+6 ft (1.83 m)	3,438 (1 559)	3,717 (1 686)	3,213 (1 457)	3,492 (1 584)	2,549 (1 156)	2,770 (1 257)
+4 ft (1.22 m)	3,374 (1 530)	3,648 (1 655)	3,146 (1 427)	3,420 (1 551)	2,521 (1 144)	2,741 (1 243)
+2 ft (0.61 m)	3,307 (1 500)	3,575 (1 622)	3,077 (1 396)	3,345 (1 517)	2,489 (1 129)	2,706 (1 227)
Ground Level	3,251 (1 475)	3,513 (1 594)	3,018 (1 369)	3,280 (1 488)	2,489 (1 129)	2,706 (1 227)
-2 ft (0.61 m)	3,201 (1 452)	3,459 (1 569)	2,965 (1 345)	3,223 (1 462)	2,466 (1 118)	2,680 (1 215)
-4 ft (1.22 m)	3,175 (1 440)	3,430 (1 556)	2,935 (1 331)	3,190 (1 447)	2,446 (1 109)	2,659 (1 206)
-6 ft (1.83 m)	3,182 (1 443)	3,437 (1 559)	2,938 (1 333)	3,193 (1 448)	2,443 (1 108)	2,656 (1 205)
-8 ft (2.44 m)	3,258 (1 478)	3,520 (1 597)	3,007 (1 364)	3,269 (1 483)	2,465 (1 118)	2,679 (1 215)
-10 ft (3.05 m)	3,441 (1 561)	3,717 (1 686)	3,175 (1 440)	3,451 (1 565)	2,530 (1 148)	2,750 (1 248)
-12 ft (3.66 m)	—	—	—	—	2,707 (1 228)	2,943 (1 335)
-14 ft (4.27 m)	—	—	—	—	3,239 (1 469)	3,521 (1 597)
Dipper Lift						
+14 ft (4.27 m)	—	—	—	—	4,281 (1 942)	4,281 (1 942)
+12 ft (3.66 m)	5,822 (2 641)	5,822 (2 641)	5,618 (2 548)	5,618 (2 548)	4,046 (1 835)	4,046 (1 835)
+10 ft (3.05 m)	5,600 (2 540)	5,600 (2 540)	5,399 (2 449)	5,399 (2 449)	3,984 (1 807)	3,984 (1 807)
+8 ft (2.44 m)	5,562 (2 523)	5,562 (2 523)	5,360 (2 431)	5,360 (2 431)	3,913 (1 775)	3,913 (1 775)
+6 ft (1.83 m)	6,236 (2 829)	6,236 (2 829)	6,030 (2 735)	6,030 (2 735)	4,166 (1 889)	4,166 (1 889)
+4 ft (1.22 m)	7,424 (3 368)	7,424 (3 368)	7,203 (3 267)	7,203 (3 267)	4,102 (1 861)	4,102 (1 861)
+2 ft (0.61 m)	—	—	—	—	4,850 (2 200)	4,850 (2 200)

NOTE: Boom and Dipper Lift Capacities are rated per SAE J31 and are 87% of the maximum hydraulic lift force available with the specified options.

# BACKHOE OPERATIONAL DATA

	Standard Backhoe		Extendahoe®	
			Retracted	Extended
Digging depth:				
Maximum	14 ft 6 in (4.41 m)		14 ft 6 in (4.41 m)	17 ft 11 in (5.47 m)
Maximum with hi-capacity bucket	15 ft 0 in (4.51 m)		15 ft 0 in (4.51 m)	18 ft 6 in (5.63 m)
2 ft (610 mm) flat bottom	14 ft 4 in (4.37 m)		14 ft 4 in (4.37 m)	17 ft 10 in (5.43 m)
8 ft (2.44 m) flat bottom	13 ft 4 in (4.06 m)		13 ft 4 in (4.06 m)	17 ft 1 in (5.19 m)
Overall reach from:				
Rear axle centerline	21 ft 10 in (6.66 m)		21 ft 10 in (6.66 m)	25 ft 3 in (7.69 m)
Swing pivot	18 ft 2 in (5.55 m)		18 ft 2 in (5.55 m)	21 ft 7 in (6.58 m)
Loading height	12 ft 1 in (3.67 m)		12 ft 1 in (3.67 m)	14 ft 5 in (4.38 m)
Loading reach	4 ft 7 in (1.41 m)		4 ft 7 in (1.41 m)	7 ft 3 in (2.20 m)
Swing arc	180°		180°	180°
Bucket rotation:				
Straight links	175.6°		175.6°	175.6°
Mechanical coupler	198.0°		198.0°	198.0°
Hydraulic coupler – Extendahoe® dipper	194.8°		194.8°	194.8°
Hydraulic coupler – standard dipper	198.0°		198.0°	198.0°
Stabilizer spread – operating:				
Flip pad	9 ft 3 in (2.82 m)		9 ft 3 in (2.82 m)	9 ft 3 in (2.82 m)
Cast pad	9 ft 7 in (2.93 m)		9 ft 7 in (2.93 m)	9 ft 7 in (2.93 m)
Digging force:				
Bucket cylinder – SAE rated 3,460 psi	13,975 lb (61 363 N)		13,975 lb (61 363 N)	13,975 lb (61 363 N)
Bucket cylinder – Power Lift	14,452 lb (64 240 N)		14,452 lb (64 240 N)	14,452 lb (64 240 N)
Dipper cylinder – SAE rated 3,460 psi	8,657 lb (38 508 N)		8,657 lb (38 508 N)	6,305 lb (28 045 N)
Dipper cylinder – Power Lift	9,070 lb (40 345 N)		9,070 lb (40 345 N)	6,606 lb (29 382.7 N)
Leveling angle:				
Flip pad	11.8°		11.8°	11.8°
Cast pad	12.8°		12.8°	12.8°

NOTE: Lift capacities apply straight to the rear of prime mover, 4WD with 19.5 L x 24.0 tires equipped with 24 in (610 mm) heavy-duty bucket and Case coupler except as noted.



## STANDARD EQUIPMENT

### OPERATOR ENVIRONMENT

See page 1

### ENGINE

FPT F5BFL413B diesel  
Selective Catalytic Reduction – SCR  
Full flow engine oil filter  
Air cleaner – replaceable dry type  
with radial seal  
Aspirated air cleaner  
Fuel filter with water trap  
Radiator with de-aeration bottle  
Antifreeze to -34° F (-37° C)  
Electronic throttles – foot and rotary hand  
Self-adjusting belt  
High Pressure Common Rail computer  
controlled injection with diagnostic features

### DRIVETRAIN

Powershift S-Type transmission, 4F-3R  
electronic transmission controller and kick  
down in loader control lever – 2WD or 4WD  
with auto function  
Front axle:  
2WD heavy-duty front axle with  
11.0 L x 16.0 tires  
4WD heavy-duty mechanically driven front  
axle with 12.0 L x 16.5 tires and drive  
shaft guard  
Rear axle:  
2/4WD heavy-duty outboard planetary drive  
with 19.5 L x 24.0 tires  
Torque converter – 11.8 in (300 mm)  
On-the-go electric 4WD control  
Electric F/R shuttle control  
Electric differential lock control, push-button  
Park brake, spring-applied, hydraulic  
release – SAHR

### HYDRAULICS

Ground level remote hydraulic test ports  
Pump:  
41 gpm @ 3,000 psi  
(156.2 L/min @ 207 bar)  
Heavy-duty hydraulic oil cooler  
7-micron, spin on oil filter

### LOADER

See page 2

### BACKHOE

See page 2

### OTHER

Forward tilt engine hood  
Replaceable, molded front bumpers  
Front/Rear tie downs  
Reflective logos  
Lights – cab and canopy:  
2 front driving  
2 rear tail/stop  
2 front flashers/turn  
2 rear flashers/turn  
Cab only:  
Adjustable halogen work lights – 55 W:  
2 front  
2 side – left and right  
4 rear  
Canopy only:  
Adjustable halogen work lights – 55 W:  
2 front  
2 side – left and right  
4 rear

### TELEMATICS

CASE SiteWatch™ Telematics – includes  
hardware and a 3-yr Advanced  
data subscription



# BACKHOE LOADERS - COMPARISON RESULTS

CASE	JOHN DEERE	CATERPILLAR
580 Super N	310SK Interim Tier 4	420 F Interim Tier 4

## ENGINE

ENGINE MAKE / MODEL		
FPT F5BFL413B	JOHN DEERE POWERTECH E 4045HT073	CATERPILLAR C4.4 ACERT
EMISSION RATING		
TIER 4	INTERIM TIER 4	INTERIM TIER 4
GROSS POWER - HP (KW)		
97 (72)	NOT PUBLISHED	102 (76)
NET POWER - HP (KW)		
95 (74)	96 (72)	95 (71)
RATED RPM - RPM		
2200	2000	2200

NET PEAK TORQUE - LBF / FT (NM)		
334 (453)	295 (400)	323 (405.438)
DISPLACEMENT - INCHES <sup>3</sup> (LTR)		
207 (3.4)	276 (4.5)	268 (4.4)
TRANSMISSION TYPE		
POWERSHIFT	POWERSHIFT	POWER SHUTTLE
MAX SPEED - MPH (KPH)		
23.6 (38)	24.8 (40)	25 (40)
SERVICE BRAKE TYPE		
WET DISC	WET MULTI DISC	WET DISC
FRONT TIRES 4WD		
12L X 16.5	12.5 / 80 - 18	11L - 16
REAR TIRES 4WD		
17.5 L24	19.5L - 24 R4	19.5 - 24

## HYDRAULIC SYSTEM

MAIN PUMP TYPE		
VARIABLE DISPLACEMENT AXIAL PISTON	TANDEM GEAR PUMP	VARIABLE DISPLACEMENT AXIAL PISTON
BACKHOE FLOW - GALLONS (US) / MIN (LT/MIN)		
41.2 (156.2)	36 (136)	43 (163)

## PERFORMANCE-LOADER

LIFT CAPACITY TO FULL HEIGHT - LBS (KG)		
7044 (3195)	NOT PUBLISHED	7237 (3283)
ARM BREAKOUT FORCE - LBF (KN)		
11161 (49.6)	11051 (49.2)	11283 (50.19)
LOADER BUCKET HEAPED CAPACITY - YD <sup>3</sup> (M <sup>3</sup> )		
1.03 (0.79)	1.125 (0.86)	1.25 (0.96)

## FIXED LENGTH DIPPER STICK

DIG DEPTH 2FT (0.61M) FLAT BOTTOM - FT/IN (MM)		
14 FT 4 IN (4370)	14 FT 4 IN (4370)	14 FT 2 IN (4311)
BUCKET DIGGING FORCE - LBF (KN)		
13975 (61.363)	11990 (53.3)	14086 (62.66)
DIPPER STICK DIGGING FORCE - LBF (KN)		
8657 (38.508)	8090 (36)	9781 (43.51)
DIPPERSTICK LIFT CAPACITY @ 12' HEIGHT - LBS (KG)		
5822 (2641)	5585 (2533)	NOT PUBLISHED
TRANSPORT HEIGHT - FT/IN (MM)		
10 FT 10 IN (3290)	11 FT 3 IN (3430)	11 FT 9 IN (3577)

## EXTENDABLE DIPPER STICK (RETRACTED)

DIG DEPTH - 0.6M (2FT) FLAT BOTTOM - RET - FT/IN (MM)		
14 FT 4 IN (4370)	14 FT 9 IN (4500)	14 FT 3 IN (4351)
BOOM LIFT - MAXIMUM REACH - RETRACTED DIPPER - LBS (KG)		
2837 (1287)	2684 (1217)	NOT PUBLISHED

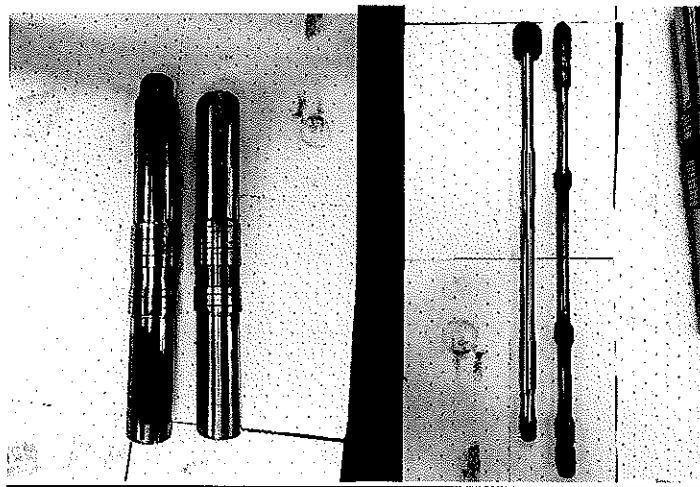


DEMOLITION ATTACHMENTS

**STANLEY®**

### Okada ORV 1300 vs Stanley MBX15

Make	Model	Energy Class	Oper. Weight	Tool Dia.	Flow	Pressure
Okada	ORV1300	1350 ft lbs	1390 lbs	3.54"	16-26	2500
Stanley	MBX15	1500 ft lbs	1168 lbs	3.3"	15-25	2200



Okada Piston on the Right

Okada Tie rod on the left

Stanley Piston on the left

Stanley Tie rod on the right

	Weight	Diameter	Length	Width
<b>ORV 1300</b>	<b>63 lbs</b>	<b>92mm/84mm</b>	<b>30"</b>	<b>25mm</b>
MBX15	67 lbs	91.5 mm/ 84.5mm*	33"	21.2mm

\*Stanleys piston is tapered at the end, it tapers down to 65mm and that is the striking surface on the tool. This particular piston was broken at the end. Having a tapered piston can make it

more susceptible to failure and results in a decrease efficiency of energy transfer from piston to tool.

## SUBMISSION OF BIDS:

Bids must be priced, signed and returned (with all necessary attachments) to the office of the City Clerk by the closing date and time specified.

The bidder must respond to this RFB by submitting all data required herein in order for the bid to be evaluated and considered for award.

Written assurance that the quoted rate/price will be honored for at least 30 days to allow for reasonable and expeditious processing by City staff and the City Council.

Date:

3-9-2017

Company Name:

Murphy Tractor

Authorized Signature:

[Signature]

Name (please Print):

Brian Bremer

Company address:

8600 NE Parvin Road

Kansas City, MO 64161

Phone:

office 816-483-5000 cell-660-424-0167

Email:

bbremer@murphytractor.com



Quote Id: 14830619

Prepared For:  
**CITY OF NEVADA**



Prepared By: **BRIAN BREMER**

Murphy Tractor & Equipment  
8600 Ne Parvin Road  
Kansas City, MO 641618300

Tel: 816-483-5000

Mobile Phone: 660-424-0167

Fax: 816-483-5721

Email: [bbremer@murphytractor.com](mailto:bbremer@murphytractor.com)

310 SL

Equivalent to Cat 420 FZ or  
Case 580 SN

Date: 28 February 2017

Offer Expires: 09 April 2017

Confidential



### Quote Summary

**Prepared For:**

CITY OF NEVADA  
110 S Ash St  
Nevada, MO 64772  
Business: 417-448-5114  
wbrown@nevadamo.gov

**Prepared By:**

BRIAN BREMER  
Murphy Tractor & Equipment  
8600 Ne Parvin Road  
Kansas City, MO 641618300  
Phone: 816-483-5000  
Mobile: 660-424-0167  
bbremer@murphytractor.com

**Quote Id:** 14830619  
**Created On:** 28 February 2017

**Expiration Date:** 09 April 2017

**Equipment Summary**

JOHN DEERE 310SL BACKHOE  
LOADER  
John Deere Extended Warranty-  
Standard 12 Month Comprehensive  
Factory Warranty

**Qty**

**Extended**

1

1

**Equipment Total**

**\$ 84,754.00 each**

**Quote Summary**

Equipment Total	\$ 84,754.00 each
SubTotal	\$ 84,754.00
Total	\$ 84,754.00
Balance Due	\$ 84,754.00 each

X 2 units \$ 169,508 total

Salesperson : X \_\_\_\_\_

Accepted By : X \_\_\_\_\_

Confidential

# Selling Equipment

Quote Id: 14830619

Customer: CITY OF NEVADA

## JOHN DEERE 310SL BACKHOE LOADER

**Equipment Notes:** Optional Equipment-Must be purchased at same time as backhoe

12" HD 3.3 CF Backhoe Bucket \$707

18" HD 5.1 CF Backhoe Bucket \$851

**Hours:****Stock Number:** To be ordered

Description	Qty
310SL BACKHOE LOADER	1

**Standard Options - Per Unit**

John Deere PowerTech Plus 4.5L (276 Cu. In.) Engine Meets Final Tier 4 and Stage IV Emissions with Net Peak Power of 99 Hp.	1
JDLINK Ultimate Cellular for the Americas, excluding Costa Rica - 5 Years	1
Cab with A/C and Heat	1
Mechanical Front Wheel Drive (MFWD) with Limited Slip Differential and 5F/3R Powershift Transmission	1
Galaxy 19.5L - 24 in. 12 PR Rear & 12.5/80-18 10PR Front	1
Pilot Controls, Two Lever, with Pattern Selection	1
New Series Multi-Brand Quick Coupler	1
24" HD Bucket with Spade and Rock Teeth	1
Extendible Dipperstick	1
Auxiliary Hydraulic with One Way Flow (Hammer)	1
Two-Function Loader Hydraulics, Single Lever	1
1.3 CY 92 in. HD Bucket with Bolt on Cutting Edge and Skid Plates	1
1250 Lb. (567 kg) Front Counterweight	1
Dual Maintenance Free Batteries With Disconnect and Jump Post	1
110 Volt Engine Coolant Heater (1000 Watts)	1
Ride Control	1
Heavy-Duty Backhoe Bucket Cylinder	1
Diagnostic Oil Sampling Ports	1
Strobe Light with Magnetic Mount	1

# Selling Equipment

Quote Id: 14830619

Customer: CITY OF NEVADA

Seat, Cloth Air-Suspension	1
Extra Cutting Edge for Loader Bucket	1
<b>Dealer Attachments</b>	
Mounting kit for multi-purpose (ABC)	1
Dry Chemical Fire Extinguisher	
extra teeth	1
extra BOE	1
<b>Service Agreements</b>	
John Deere Extended Warranty -	
Standard 12 Month Comprehensive	
Factory Warranty	
<b>Other Charges</b>	
Freight	1
Setup	1
Fuel	1
Followup	1
Branch Freight	1

Quote Id: 14831313

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Prepared For:  
**CITY OF NEVADA**



Prepared By: **BRIAN BREMER**

Murphy Tractor & Equipment  
8600 Ne Parvin Road  
Kansas City, MO 641618300

Tel: 816-483-5000  
Mobile Phone: 660-424-0167  
Fax: 816-483-5721  
Email: [bbremer@murphytractor.com](mailto:bbremer@murphytractor.com)

410L

*Equivalent to Cat 430FZ or  
Case 590SN*

Date: 28 February 2017

Offer Expires: 09 April 2017

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Confidential

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**Quote Summary****Prepared For:**

CITY OF NEVADA  
110 S Ash St  
Nevada, MO 64772  
Business: 417-448-5114  
wbrown@nevadamo.gov

**Prepared By:**

BRIAN BREMER  
Murphy Tractor & Equipment  
8600 Ne Parvin Road  
Kansas City, MO 641618300  
Phone: 816-483-5000  
Mobile: 660-424-0167  
bbremer@murphytractor.com

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**Quote Id:** 14831313  
**Created On:** 28 February 2017

**Expiration Date:** 09 April 2017

---

**Equipment Summary**

JOHN DEERE 410L BACKHOE  
LOADER  
John Deere Extended Warranty-  
Standard 12 month Comprehensive  
Factory Warranty

**Qty****Extended**

1

1

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**Equipment Total****\$ 90,771.00**

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**Quote Summary**

Equipment Total	\$ 90,771.00
SubTotal	\$ 90,771.00
Total	\$ 90,771.00
<b>Balance Due</b>	<b>\$ 90,771.00</b>

---

**Salesperson : X** \_\_\_\_\_**Accepted By : X** \_\_\_\_\_

# Selling Equipment

Quote Id: 14831313

Customer: CITY OF NEVADA

## JOHN DEERE 410L BACKHOE LOADER

**Equipment Notes:** Optional Equipment-Must be purchased at same time as backhoe:

- 12" HD 3.3 CF Backhoe Bucket \$707
- 18" HD 5.1 CF Backhoe Bucket \$851
- Jack Hammer-Kent/FRD F6 1000 ft lb \$9,677
- Jack Hammer Kent/FRD F9 1500 ft lb \$14,606
- IT attachment (Loader Bucket Coupler) \$3,929
- 48" Coupler Forks \$1,715
- 4 in 1 Coupler Bucket 1.32 CY 92" \$3,605

**Hours:**
**Stock Number:** To be ordered

Description	Qty
410L BACKHOE LOADER	1

### Standard Options - Per Unit

JDLINK Ultimate Cellular - 5 Years	1
John Deere PowerTech Plus 4.5L (276 Cu. In.) Engine Meets Final Tier 4 and Stage IV Emissions with Net Peak Power of 113 Hp.	1
Cab with A/C and Heat	1
Mechanical Front Wheel Drive (MFWD) with Limited Slip Differential and 5F/3R Powershift Transmission	1
Galaxy 21L 24 in. 12 PR Rear & 12.5/80-18 10PR Front	1
Pilot Controls, Two Lever, with Pattern Selection	1
New Series Multi-Brand Quick Coupler	1
24" HD Bucket with Spade and Rock Teeth	1
Extendible Dipperstick	1
Auxiliary Hydraulic with One Way Flow (Hammer)	1
Two-Function Loader Hydraulics, Single Lever	1
1.5 CY 92 in. HD Bucket with Bolt-On Cutting Edge and Skid Plates	1
1250 Lb. (567 kg) Front Counterweight	1
Dual Maintenance Free Batteries With Disconnect and Jump Post	1
110 Volt Engine Coolant Heater (1000 Watts)	1
Ride Control	1
Diagnostic Oil Sampling Ports	1

# Selling Equipment

Quote Id: 14831313

Customer: CITY OF NEVADA

Strobe Light with Magnetic Mount	1
Radio, Bosch Basic Package	1
Exterior Rear View Mirrors (2)	1
Seat, Cloth Air-Suspension	1
Extra Cutting Edge for Loader Bucket	1
<b>Dealer Attachments</b>	
ABC Fire Extinguisher	1
Extra Teeth	1
Extra BOE	1
<b>Service Agreements</b>	
John Deere Extended Warranty - Standard 12 month Comprehensive Factory Warranty	
<b>Other Charges</b>	
Freight	1
Setup	1
Followup	1
Fuel	1
Branch Freight	1

Hydraulic pump is pressure compensated  
load sensing axial-piston -  
closed system.



Quote Id: 14849542

Prepared For:  
**CITY OF NEVADA**



Prepared By: **BRIAN BREMER**

Murphy Tractor & Equipment  
8600 Ne Parvin Road  
Kansas City, MO 641618300

Tel: 816-483-5000  
Mobile Phone: 660-424-0167  
Fax: 816-483-5721  
Email: [bbremer@murphytractor.com](mailto:bbremer@murphytractor.com)

710L

Equivalent to Cat 450F

---

**Quote Summary****Prepared For:**

CITY OF NEVADA  
110 S Ash St  
Nevada, MO 64772  
Business: 417-448-5114  
wbrown@nevadamo.gov

**Prepared By:**

BRIAN BREMER  
Murphy Tractor & Equipment  
8600 Ne Parvin Road  
Kansas City, MO 641618300  
Phone: 816-483-5000  
Mobile: 660-424-0167  
bbremer@murphytractor.com

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**Quote Id:** 14849542  
**Created On:** 02 March 2017

**Expiration Date:** 09 April 2017

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**Equipment Summary**

JOHN DEERE 710L BACKHOE  
LOADER  
John Deere Extended Warranty-  
Standard 12 Month Comprehensive  
Factory Warranty

**Qty****Extended**

1

1

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**Equipment Total****\$ 143,913.86**

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**Quote Summary**

Equipment Total	\$ 143,913.86
SubTotal	\$ 143,913.86
Total	\$ 143,913.86
<b>Balance Due</b>	<b>\$ 143,913.86</b>

Salesperson : X \_\_\_\_\_

Accepted By : X \_\_\_\_\_

# Selling Equipment

Quote Id: 14849542

Customer: CITY OF NEVADA

## JOHN DEERE 710L BACKHOE LOADER

**Equipment Notes:** Optional Equipment-Must be purchased at same time as backhoe

12" HD Backhoe Bucket-Not available  
18" HD 7.5 CF Backhoe Bucket \$2,300  
Jack Hammer-Kent/FRD FX125 2000 ft lb \$18,649  
IT attachment (loader Bucket Coupler) \$5,146  
48" Coupler Forks \$2,679  
4 in 1 Coupler Bucket 1.32 CY 96" \$4,750

**Hours:****Stock Number:** To be ordered

Description	Qty
710L BACKHOE LOADER	1

### Standard Options - Per Unit

JDLink Ultimate Cellular - 5 Years	1
John Deere PowerTech Plus 4.5L (276 Cu. In.) Engine Meets Final Tier 4 and Stage IV Emissions with Net Peak Power of 148 Hp.	1
Cab with A/C and Heat	1
Mechanical Front Wheel Drive (MFWD) with Limited Slip Differential and 4F/3R Powershift Transmission	1
Galaxy 21L-28 18PR Rear; 15-19.5 12PR Front Tires	1
Pilot Controls, Two Lever, with Pattern Selection	1
24": HD Bucket with Spade and Rock Teeth	1
Extendible Dipperstick	1
Auxiliary Hydraulic with One Way Flow (Hammer)	1
Two-Function Loader Hydraulics, Single Lever	1
1.87 CY Bucket with Bolt-On Cutting Edge and Skid Plates	1
1500 lbs. (680 kg.) Counterweight	1
Dual Maintenance Free Batteries With Disconnect and Jump Post	1
120 Volt Engine Coolant Heater	1
Diagnostic Oil Sampling Ports	1
Strobe Light with Magnetic Mount	1
Radio, Bosch Basic Package	1
Exterior Rear View Mirrors (2)	1

# Selling Equipment

Quote Id: 14849542

Customer: CITY OF NEVADA

Seat, Cloth Air-Suspension	1
Extra Cutting Edge for Loader Bucket	1
Ride Control	1
<b>Dealer Attachments</b>	
Mounting kit for multi-purpose (ABC)	1
Dry Chemical Fire Extinguisher	
Extra Teeth	1
Extra BOE	1
Backhoe Bucket Coupler	1
<b>Service Agreements</b>	
John Deere Extended Warranty -	
Standard 12 Month Comprehensive	
Factory Warranty	
<b>Other Charges</b>	
Freight	1
Fuel	1
Setup	1
Followup	1
Branch Freight	1

Transmission is 4F/3R speed  
Hydraulic Pump is pressure compensated  
load sensing axial-piston -  
Closed system



Quote 151977-02  
March 9, 2017

CITY OF NEVADA CITY HALL  
110 S ASH ST  
NEVADA  
Missouri  
64772-3117

Attention: TOM HUTCHINSON

Dear Sirs,

We would like to thank you for your interest in our company and our products, and are pleased to quote the following for your consideration.

Three (3) CATERPILLAR Backhoe/Industrial Loaders --

We wish to thank you for the opportunity of quoting on your equipment needs. This quote is contingent upon Customer's acceptance of Foley's standard terms and conditions. This quotation is valid for 30 days, after which time we reserve the right to re-quote. If there are any questions, please do not hesitate to contact me.

Sincerely,



John Howard  
Regional Sales Representative

## CATERPILLAR 2017 420F2 Backhoe(s) x 2

### MACHINE SPECIFICATIONS

Description	Reference No
420F2 BHL ST, TIER 4, HRC	450-8448
2017 MODEL	
STICK, EXTENDABLE, 14FT	450-8730
PT, 4WD, AUTOSHIFT	450-8616
ENGINE, 74.5KW,C4.4 ACERT, T4F	450-8757
HYDRAULICS, MP, 6FCN/8BNK, ST	450-8530
PRODUCT LINK, CELLULAR, PL641I	447-0049
CAB, DELUXE	450-8683
WORKLIGHTS (8) HALOGEN LAMPS	491-6734
SEAT, DELUXE FABRIC	433-4806
BELT, SEAT, 2" SUSPENSION	206-1747
AIR CONDITIONER, T4	450-8715
TIRES, 12.5 80/19.5L-24, FS	380-8961
COUNTERWEIGHT, 1015 LBS	337-9696
STABILIZER PADS, FLIP-OVER	9R-6007
BUCKET-GP, 1.5 CYD	337-7401
CUTTING EDGE, TWO PIECE,WIDE	9R-5320
INSTRUCTIONS, ANSI	430-9944
SERIALIZED TECHNICAL MEDIA KIT	421-8926
RIDE CONTROL	398-2681
COUPLING,QD,THREADED WITH CAPS	456-3390
LINES, COMBINED AUX, E-STICK	398-2853
RADIO & CD PLAYER, BLUETOOTH	387-6598
COLD WEATHER PACKAGE, 120V HRC	398-2882
PLATE GROUP - BOOM WEAR	423-7607
GUARD, STABILIZER	353-1389
PACK, DOMESTIC TRUCK	0P-0210
SHIPPING/STORAGE PROTECTION	461-6839
RUST PREVENTATIVE APPLICATOR	462-1033
QUICK COUPLER - QGN00544	444-7500
BK420FP24 - HGN00147	2193396
SECURITY SYSTEM, KEYPAD	387-6570

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SELL PRICE

\$94,000.00

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### WARRANTY

Standard Warranty:

12 months unlimited hours

Extended Warranty:

Additional Warranty available upon request

## CATERPILLAR 2017 430F2 Backhoe

### MACHINE SPECIFICATIONS

#### Description

#### Reference No

430F2 BHL ST, TIER 4, HRC	450-8452
Available for ADSD-N and ADSD-S (Puerto Rico only)	
BUCKET-GP, 1.5 CYD	337-7401
CUTTING EDGE, TWO PIECE,WIDE	9R-5320
TIRES, 12.5 80/19.5L-24, FS	380-8961
WORKLIGHTS (8) HALOGEN LAMPS	491-6734
INSTRUCTIONS, ANSI	430-9944
BELT, SEAT, 2" SUSPENSION	206-1747
STABILIZER PADS, FLIP-OVER	9R-6007
BUCKET-HD, 24", 6.2 CFT	219-3387
COUPLER, PIN LOCK	487-0712
SERIALIZED TECHNICAL MEDIA KIT	421-8926
SHIPPING/STORAGE PROTECTION	461-6839
RUST PREVENTATIVE APPLICATOR	462-1033
PACK, DOMESTIC TRUCK	0P-0210
BEACON, MAGNETIC MOUNT	211-4292
STICK, EXTENDABLE, 16FT	450-8732
PT, 4WD, AUTOSHIFT	450-8616
ENGINE, 86KW, C4.4 ACERT, T4F	450-8761
HYDRAULICS, MP, 6FCN/8BNK, ST	450-8530
PRODUCT LINK, SATELLITE,PL631E	447-0048
CAB, DELUXE	450-8683
SEAT, DELUXE FABRIC	433-4806
AIR CONDITIONER, T4	450-8715
COUNTERWEIGHT, 1015 LBS	337-9696
COUPLING,QD,THREADED WITH CAPS	456-3390
RIDE CONTROL	398-2681
SECURITY SYSTEM, KEYPAD	387-6570

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SELL PRICE

\$102,000.00

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### WARRANTY

Standard Warranty:

12 months unlimited hours

Extended Warranty:

Additional Warranty available upon request

## CATERPILLAR 430F2 FIT Backhoe

### MACHINE SPECIFICATIONS

Description	Reference No
430F2 BHL IT, TIER 4, HRC	450-8454
Available for ADSD-N and ADSD-S (Puerto Rico only)	
TIRES, 12.5 80/19.5L-24, FS	380-8961
WORKLIGHTS (8) HALOGEN LAMPS	491-6734
INSTRUCTIONS, ANSI	430-9944
BELT, SEAT, 2" SUSPENSION	206-1747
STABILIZER PADS, FLIP-OVER	9R-6007
BUCKET-HD, 24", 6.2 CFT	219-3387
COUPLER, PIN LOCK	487-0712
SERIALIZED TECHNICAL MEDIA KIT	421-8926
SHIPPING/STORAGE PROTECTION	461-6839
RUST PREVENTATIVE APPLICATOR	462-1033
PACK, DOMESTIC TRUCK	0P-0210
BEACON, MAGNETIC MOUNT	211-4292
BUCKET-GP, 1.31 CYD, IT	251-1800
CUTTING EDGE, TWO PIECE	9R-5321
STICK, EXTENDABLE, 16FT	450-8732
PT, 4WD, AUTOSHIFT	450-8616
ENGINE, 86KW, C4.4 ACERT, T4F	450-8761
HYDRAULICS, MP, 6FCN/8BNK, IT	450-8533
PRODUCT LINK, SATELLITE, PL631E	447-0048
CAB, DELUXE	450-8683
SEAT, DELUXE FABRIC	433-4806
AIR CONDITIONER, T4	450-8715
COUNTERWEIGHT, 1015 LBS	337-9696
RIDE CONTROL	398-2681
RADIO & CD PLAYER	387-6597
FAN, DELUXE CAB	387-6682
SECURITY SYSTEM, KEYPAD	387-6570
BATTERY, HEAVY DUTY	457-2797
COLD WEATHER PACKAGE, 120V HRC	398-2882
LINES, HYD COUPLER 16FT E-STICK	450-8580

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SELL PRICE

\$110,000.00

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### WARRANTY

Standard Warranty:	12 months unlimited hours
Extended Warranty:	Additional Warranty available upon request



### OPTIONAL ATTACHMENTS AND FEATURES

- Guards over Stabilizers \$830 per machine
- Boom Wear Plate Group \$206 per machine
- 12" HD Bucket Backhoe \$1,428 each
- 16" HD Bucket Backhoe \$1,520 each
- Hydraulic Thumb w tines \$6,000 each
- 48" IT Pallet Forks \$4,024 each
- 1.3 CYD MP Bucket \$7,500 each
- CAT H65E S Hammer \$14,700 each (includes all brackets, lines & chisel bit)
- CAT H95E S Hammer \$29,500 each (includes all brackets, lines, & chisel bit)

F.O.B/TERMS  
Nevada, MO

Accepted by \_\_\_\_\_ on \_\_\_\_\_

\_\_\_\_\_  
Signature



# Cat®

## 420F2/420F2 IT

### BACKHOE LOADER

The Cat® 420F2 and 420F2 IT Backhoe Loaders deliver performance, increased fuel efficiency, superior hydraulic system, versatility and an all new operator station. The 420F2 and 420F2 IT feature the following:

- **Ergonomic Operator Station** – Ample legroom inside the cab makes rotating the seat simple. The air suspension seat provides comfort to the operator while roading. New backhoe control pods allow for unlimited adjustability.
- **Load Sensing Hydraulics** – The Cat Backhoe Loader's load sensing piston pump provides full hydraulic lifting and digging forces at any engine speed. Variable flow pump matches hydraulic power to work demands.
- **Machine Performance** – The Cat C4.4 ACERT™ engine delivers solid performance and meets U.S. EPA Tier 4 Final/EU Stage IV emission standards by utilizing Selective Catalytic Reduction technology with a diesel oxidation catalyst. The system allows the operator to disconnect the machine, even while the diesel exhaust fluid is being purged from the system.
- **Machine Versatility** – A broad range of performance matched Cat Work Tools make the Cat Backhoe Loader the most versatile machine on the job site. All Backhoe Loaders have standard thumb ready sticks. The Integrated Tool Carrier (IT Loader) provides versatility and allows quick connection to a variety of Cat Work Tools.
- **Dual Lock Coupler** – Cat dual lock coupler is available from the factory with either mechanical or hydraulic operation. The coupler makes work tool changes quick and easy.

## Specifications

### Engine

Engine Model	Cat C4.4 ACERT	
Gross Power		
SAE J1995	76 kW	102 hp
ISO 14396	74 kW	100 hp
Rated Net Power @ 2,200 rpm		
SAE J1349	69 kW	93 hp
ISO 9240	70 kW	94 hp
EEC 80/1269	70 kW	94 hp
Net Peak Power @ 1,800 rpm		
SAE J1349	78 kW	105 hp
ISO 9249	79 kW	106 hp
EEC 80/1269	79 kW	106 hp
Bore	105 mm	4.13 in
Stroke	127 mm	5 in
Displacement	4.4 L	268 in³
Net Torque Rise @ 1,400 rpm	46%	
Net Peak Torque SAE J1349	436 N·m	322 lbf·ft

- Engine meets Tier 4 Final/Stage IV emission standards.

### Weights\*

Operating Weight		
Minimum	7726 kg	17,033 lb
Maximum (ROPS Capacity)	11 000 kg	24,251 lb
Cab, ROPS/FOPS	163 kg	359 lb
AutoShift Transmission	238 kg	525 lb
Ride Control	14 kg	31 lb
Air Conditioning	42 kg	93 lb
Four Wheel Drive	165 kg	364 lb
MP Bucket (1.0 m³/1.31 yd³) (no forks or teeth)	745 kg	1,642 lb
Loader, IT with Quick Coupler	317 kg	699 lb
Extendible Stick	305 kg	672 lb
Counterweights (Option 1)	115 kg	255 lb
Counterweights (Option 2)	240 kg	530 lb
Counterweights (Option 3)	460 kg	1,015 lb

\*Specifications shown are for machine equipped with single tilt loader, OROPS, two wheel drive, standard stick, 0.96 m³ (1.25 yd³) general purpose loader bucket, 610 mm (24 in) standard duty backhoe bucket, 240 kg (530 lb) counterweight and full fuel tank.



# 420F2/420F2 IT Backhoe Loader

## Transmission

### Power Shuttle Transmission – Standard

Forward – 1st	5.4 km/h	3.4 mph
2nd	9.0 km/h	5.6 mph
3rd	21 km/h	13 mph
4th	40 km/h	25 mph
Reverse – 1st	5.4 km/h	3.4 mph
2nd	9.0 km/h	5.6 mph
3rd	21 km/h	13 mph
4th	40 km/h	25 mph

### AutoShift Transmission – Optional

Forward – 1st	5.8 km/h	3.6 mph
2nd	9.3 km/h	5.7 mph
3rd	12 km/h	7 mph
4th	19 km/h	12 mph
5th	26 km/h	16 mph
5th LUC	—	—
6th	40 km/h	25 mph
6th LUC	—	—
Reverse – 1st	5.8 km/h	3.6 mph
2nd	12 km/h	7.6 mph
3rd	28 km/h	17 mph

### AutoShift Transmission with Lock-Up Torque Converter – Optional

Forward – 1st	5.8 km/h	3.6 mph
2nd	9.3 km/h	5.7 mph
3rd	12 km/h	7 mph
4th	19 km/h	12 mph
5th	23 km/h	14 mph
5th LUC	25 km/h	15 mph
6th	40 km/h	25 mph
6th LUC	40 km/h	25 mph
Reverse – 1st	5.8 km/h	3.6 mph
2nd	12 km/h	7.6 mph
3rd	28 km/h	17 mph

## Axle Ratings

### Front Axle, 2WD

Static	22 964 kg	50,582 lb
Dynamic	9186 kg	20,233 lb

### Front Axle, 4WD

Static	22 964 kg	50,582 lb
Dynamic	9186 kg	20,233 lb

### Rear Axle

Static	22 964 kg	50,582 lb
Dynamic	9186 kg	20,233 lb

## Hydraulic System

Type	Closed Center	
Pump Type	Variable Flow, Axial Piston	
Pump Capacity @ 2,200 rpm	163 L/min	43 gal/min
System Pressure – Backhoe	25 000 kPa	3,600 psi
System Pressure – Loader	25 000 kPa	3,600 psi

## Steering

Type	Front Wheel	
Power Steering	Hydrostatic	
Bore	65 mm	2.6 in
Stroke	120 mm	4.7 in
Rod Diameter	36 mm	1.4 in
Axle Oscillation	11°	
Turning Circle – 2WD/4WD (inner wheel not braked)		
Outside, Front Wheels	8.18 m	26'10"
Outside, Widest Loading Bucket	10.97 m	36'0"

## Service Refill Capacities

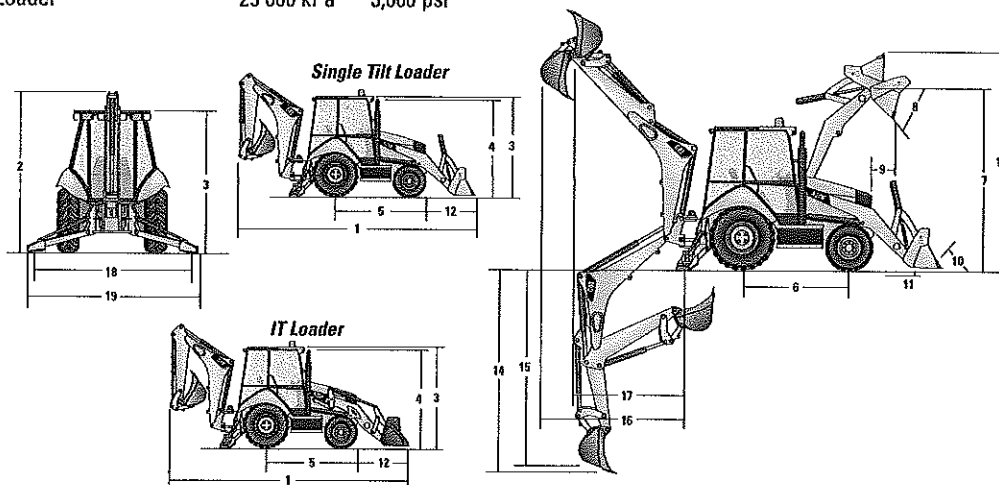
Cooling System with Air Conditioning	22.5 L	5.9 gal
Fuel Tank	160 L	42 gal
Diesel Exhaust Fluid	19 L	5.0 gal
Engine Oil with Filter	8.8 L	2.3 gal
Transmission – Power Shuttle		
2WD	15.0 L	4.0 gal
4WD	15.0 L	4.0 gal
Transmission – AutoShift		
4WD	19.0 L	5.0 gal
Rear Axle	16.5 L	4.4 gal
Planetaries	1.7 L	0.4 gal
Front Axle (4WD)	11.0 L	2.9 gal
Planetaries	0.7 L	0.2 gal
Hydraulic System	95.0 L	25.1 gal
Hydraulic Tank	40.0 L	10.6 gal

- Requires ultra-low sulfur fuel <= 15 ppm fuel sulfur

## Tires

Choices listed as combination of front/rear tires:

- 11L-16 (12 ply) F-3/19.5L-24 (12 ply) R4 ATU
- 12.5/80-18 (12 ply) 1-3/19.5L-24 (12 ply) ATU
- 12.5/80-18 NHS (12 ply) 1-3/21L-24 (16 ply) R4 ATU
- 340/80R 18/19.5L-24 (12 ply) R4 ATU
- 340/80R 18/500/70R 24 RT



# 420F2/420F2 IT Backhoe Loader

## Dimensions

	Single Tilt Loader				IT Loader with Quick Coupler			
	0.96 m³ (1.25 yd³) GP Bucket		1.00 m³ (1.31 yd³) MP Bucket		0.96 m³ (1.25 yd³) GP Bucket		1.00 m³ (1.31 yd³) MP Bucket	
1 Overall Length (Loader on Ground) – Standard Stick	7141 mm	23'5"	7059 mm	23'2"	7289 mm	23'11"	7197 mm	23'7"
Overall Length (Loader on Ground) – Extendible Stick	7147 mm	23'5"	7064 mm	23'2"	7295 mm	23'11"	7203 mm	23'8"
Overall Transport Length – Standard Stick	7169 mm	23'6"	7133 mm	23'5"	7282 mm	23'11"	7211 mm	23'8"
Overall Transport Length – Extendible Stick	7175 mm	23'6"	7139 mm	23'5"	7288 mm	23'11"	7217 mm	23'8"
2 Overall Transport Height – Standard Stick	3577 mm	11'9"	3577 mm	11'9"	3577 mm	11'9"	3577 mm	11'9"
Overall Transport Height – Extendible Stick	3631 mm	11'11"	3631 mm	11'11"	3631 mm	11'11"	3631 mm	11'11"
Overall Width	2322 mm	7'7"	2322 mm	7'7"	2322 mm	7'7"	2322 mm	7'7"
3 Height to Top of Cab/Canopy	2819 mm	9'3"	2819 mm	9'3"	2819 mm	9'3"	2819 mm	9'3"
4 Height to Top of Exhaust Stack	2744 mm	9'0"	2744 mm	9'0"	2744 mm	9'0"	2744 mm	9'0"
Height to Loader Hinge Pin (Transport)	381 mm	1'3"	432 mm	1'5"	396 mm	1'4"	386 mm	1'3"
Ground Clearance (minimum)	294 mm	1'0"	294 mm	1'0"	294 mm	1'0"	294 mm	1'0"
5 Rear Axle Centerline to Front Grill	2705 mm	8'10"	2705 mm	8'10"	2705 mm	8'10"	2705 mm	8'10"
Front Wheel Tread Gauge	1895 mm	6'3"	1895 mm	6'3"	1895 mm	6'3"	1895 mm	6'3"
Rear Wheel Tread Gauge	1714 mm	5'7"	1714 mm	5'7"	1714 mm	5'7"	1714 mm	5'7"
6 Wheelbase 2WD/4WD	2200 mm	7'3"	2200 mm	7'3"	2200 mm	7'3"	2200 mm	7'3"

## Loader Bucket Dimensions and Performance

	Single Tilt Loader				IT Loader with Quick Coupler			
	0.96 m³ (1.25 yd³) GP Bucket		1.00 m³ (1.31 yd³) MP Bucket		0.96 m³ (1.25 yd³) GP Bucket		1.00 m³ (1.31 yd³) MP Bucket	
Capacity (SAE Rated)	0.96 m³	1.25 yd³	1.00 m³	1.31 yd³	0.96 m³	1.25 yd³	1.00 m³	1.31 yd³
Overall Bucket Width	2262 mm	89 in	2279 mm	90 in	2262 mm	89 in	2279 mm	90 in
Lift Capacity at Maximum Height	3283 kg	7,237 lb	3097 kg	6,828 lb	3716 kg	8,193 lb	3448 kg	7,601 lb
Lift Breakout Force	49 809 N	11,197 lbf	49 019 N	11,020 lbf	51 085 N	11,484 lbf	49 678 N	11,168 lbf
Tilt Breakout Force	50 190 N	11,283 lbf	57 555 N	12,938 lbf	46 314 N	10,411 lbf	50 380 N	11,325 lbf
Tipping Load at Breakout Point	6578 kg	14,503 lb	6659 kg	14,681 lb	5951 kg	13,120 lb	6029 kg	13,292 lb
7 Maximum Hinge Pin Height	3474 mm	11'5"	3474 mm	11'5"	3490 mm	11'5"	3490 mm	11'5"
8 Dump Angle at Full Height	44°		44°		44°		44°	
Dump Height at Maximum Angle	2746 mm	9'0"	2798 mm	9'2"	2679 mm	8'9"	2745 mm	9'0"
Dump Reach at Maximum Angle	808 mm	2'8"	716 mm	2'4"	869 mm	2'10"	814 mm	2'8"
10 Maximum Bucket Rollback at Ground Level	37°		38°		40°		39°	
11 Digging Depth	83 mm	3"	110 mm	4"	105 mm	4"	95 mm	4"
Maximum Grading Angle	112°		116°		110°		112°	
Width of Dozer Cutting Edge	N/A		2262 mm		N/A		2262 mm	
12 Grill to Bucket Cutting Edge, Carry Position	1487 mm	4'11"	1451 mm	4'9"	1600 mm	5'3"	1529 mm	5'0"
13 Maximum Operating Height	4355 mm	14'3"	4404 mm	14'5"	4407 mm	14'6"	4480 mm	14'8"
Jaw Opening Maximum	N/A		790 mm		N/A		790 mm	
Bucket Jaw Clamping Force	N/A		55 700 N		N/A		55 700 N	
Weight (does not include teeth or forks)	451 kg	994 lb	745 kg	1,642 lb	447 kg	985 lb	724 kg	1,596 lb

## Backhoe Dimensions and Performance

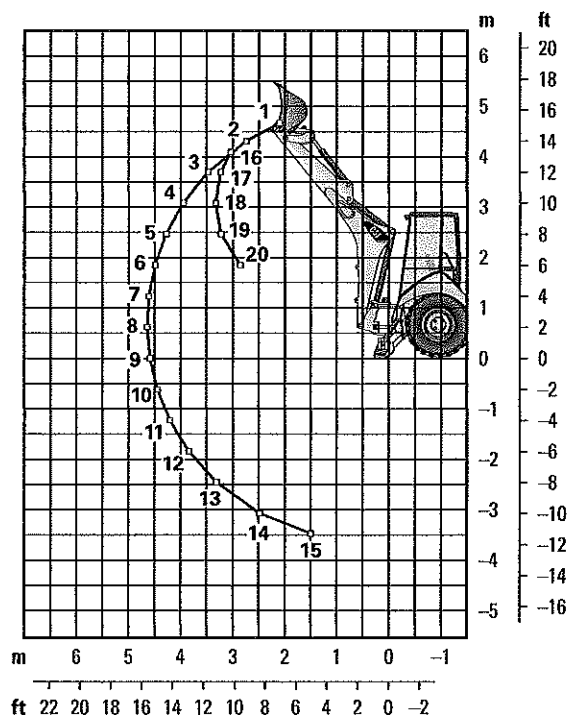
	Standard Stick		E-Stick Retracted		E-Stick Extended	
14 Digging Depth, SAE (max.)	4360 mm	14'4"	4390 mm	14'5"	5442 mm	17'11"
15 Digging Depth, 610 mm (2 ft) Flat Bottom	4311 mm	14'2"	4351 mm	14'4"	5405 mm	17'9"
Reach from Rear Axle Centerline at Ground Line	6702 mm	22'1"	6737 mm	22'2"	7742 mm	25'6"
16 Reach from Swing Pivot at Ground Line	5612 mm	18'5"	5647 mm	18'7"	6652 mm	21'10"
Maximum Operating Height	5522 mm	18'1"	5546 mm	18'3"	6282 mm	20'8"
Loading Height	3642 mm	11'11"	3599 mm	11'10"	4169 mm	13'8"
17 Loading Reach	1842 mm	6'1"	1929 mm	6'4"	2844 mm	9'4"
Swing Arc	180°		180°		180°	
Bucket Rotation	205°		205°		205°	
18 Stabilizer Spread, Operating Position (center)	3310 mm	10'10"	3310 mm	10'10"	3310 mm	10'10"
Stabilizer Spread, Operating Position (outside)	3770 mm	12'4"	3770 mm	12'4"	3770 mm	12'4"
Stabilizer Spread, Transport Position	2322 mm	7'7"	2322 mm	7'7"	2322 mm	7'7"
Bucket Dig Force	64 191 N	14,431 lbf	63 290 N	14,228 lbf	63 290 N	14,228 lbf
Stick Dig Force	43 510 N	9,781 lbf	43 402 N	9,757 lbf	31 682 N	7,122 lbf

# 420F2/420F2 IT Backhoe Loader

## Backhoe Lift Capacity

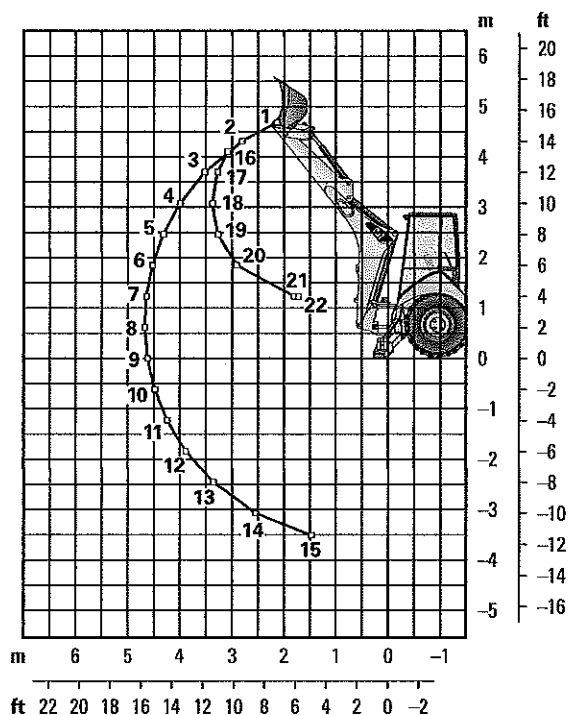
### Cat 420F2/420F2 IT Standard Stick

Boom Lifting		kg	lb
1		1621	3,573
2		1766	3,894
3		1785	3,936
4		1740	3,835
5		1678	3,700
6		1614	3,558
7		1551	3,420
8		1492	3,289
9		1437	3,168
10		1387	3,058
11		1342	2,959
12		1304	2,875
13		1278	2,817
14		1284	2,831
15		1426	3,145
Stick Lifting		kg	lb
16		1831	4,037
17		2557	5,638
18		2608	5,749
19		2704	5,961
20		3140	6,921



### Cat 420F2/420F2 IT Extendible Stick -- Retracted

Boom Lifting		kg	lb
1		1439	3,173
2		1573	3,468
3		1582	3,487
4		1533	3,380
5		1470	3,241
6		1405	3,097
7		1341	2,957
8		1281	2,823
9		1224	2,699
10		1172	2,584
11		1124	2,479
12		1083	2,387
13		1050	2,314
14		1040	2,293
15		1149	2,534
Stick Lifting		kg	lb
16		1677	3,697
17		2387	5,262
18		2404	5,301
19		2492	5,493
20		2886	6,362
21		5629	12,409
22		6024	13,281



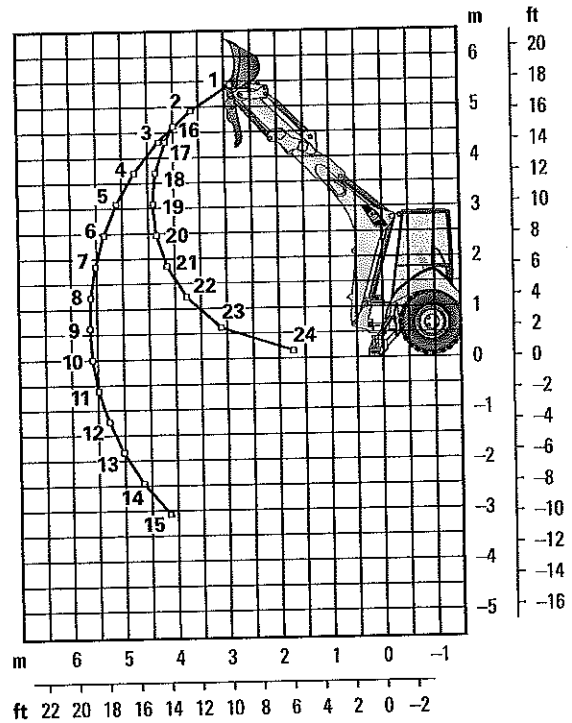
Lift Capacities are over-end values. Machine equipped with 4WD, OROPS, 0.96 m<sup>3</sup> (1.25 yd<sup>3</sup>) general purpose bucket, and no counterweight. Extendible stick includes 460 kg (1,015 lb) counterweight.

# 420F2/420F2 IT Backhoe Loader

## Backhoe Lift Capacity

### Cat 420F2/420F2 IT Extendible Stick - Extended

Boom Lifting	kg	lb
1	838	1,849
2	1010	2,226
3	1073	2,366
4	1085	2,392
5	1070	2,358
6	1041	2,296
7	1003	2,212
8	976	2,153
9	950	2,095
10	887	1,955
11	875	1,928
12	873	1,924
13	895	1,973
14	1023	2,255
15	1502	3,311
Stick Lifting	kg	lb
16	868	1,914
17	1116	2,461
18	1457	3,212
19	1644	3,624
20	1671	3,684
21	1777	3,918
22	2015	4,442
23	2614	5,762
24	5992	13,209



Lift Capacities are over-end values. Machine equipped with 4WD, OROPS, 0.96 m<sup>3</sup> (1.25 yd<sup>3</sup>) general purpose bucket, and no counterweight. Extendible stick includes 460 kg (1,015 lb) counterweight.

# 420F2/420F2 IT Backhoe Loader

## Counterweights (Minimum Counterweight Recommendations)

### Standard Stick

Loader Bucket	Power Train	Single-Tilt		IT Loader w/QC	
		kg	lb	kg	lb
GP	4WD	240	530	no counterweight	
MP	4WD	no counterweight		no counterweight	
Forks	4WD	N/A	N/A	no counterweight	
Material Handling Arm	4WD	N/A	N/A	no counterweight	

### Extendible Stick

Loader Bucket	Power Train	Single-Tilt		IT Loader w/QC	
		kg	lb	kg	lb
GP	4WD	460	1,015	240	530
MP	4WD	240	530	no counterweight	
Forks	4WD	N/A	N/A	240	530
Material Handling Arm	4WD	N/A	N/A	240	530

## Backhoe Buckets (With weld on adapters and pin-on teeth)

### Standard Duty

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	80	2.8	111	245	3
457	18	120	4.2	122	268	4
610	24	180	6.4	141	311	5
762	30	230	8.1	157	345	5
914	36	290	10.2	176	388	6

### Heavy Duty

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	80	2.8	121	266	3
406	16	110	3.9	128	282	3
457	18	120	4.2	135	299	4
610	24	180	6.4	151	333	5
762	30	230	8.1	177	391	5
914	36	290	10.2	201	443	6

### Soil Excavation

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
457	18	180	6.4	155	341	4
610	24	240	8.5	182	402	5
762	30	320	11.3	206	454	5
914	36	380	13.4	233	513	6

### Heavy Duty Rock

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	70	2.5	127	279	3
457	18	130	4.6	146	322	4
610	24	200	7.1	174	384	5
762	30	270	9.5	197	434	5
914	36	330	11.7	224	493	6

### Coral

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	60	2.1	134	295	4
457	18	100	3.5	155	341	6
610	24	140	4.9	182	402	8
762	30	190	6.7	210	463	10

### Heavy Duty – Pin Lock

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	96	3.4	113	249	3
406	16	123	4.3	131	288	3
457	18	139	4.9	139	307	4
610	24	207	7.3	168	370	5
762	30	275	9.7	194	428	5
914	36	345	12.2	224	494	6

### High Capacity – Pin Lock

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	96	4.6	113	287	3
406	16	123	5.6	131	327	3
457	18	139	6.5	139	346	4
610	24	207	9.6	168	414	5
762	30	275	12.9	194	475	5
914	36	345	16.2	224	543	6

# 420F2/420F2 IT Backhoe Loader

## STANDARD EQUIPMENT

- Adjustable auxiliary controls, backhoe loader
- Air cleaner
- Alarm, back-up
- Audible system fault alarm
- Automatic Engine Speed Control (AESC)
- Battery, maintenance-free, 880 CCA
- Battery disconnect switch
- Battery remote jumpstart
- Boom transport lock
- Brace, lift cylinder
- Brake, secondary parking
- Brakes, hydraulically boosted, oil disc, dual pedals, interlocking
- Bucket level indicator
- Canopy, ROPS/FOPS
- Cat cushion swing system
- Coat restraint
- Coolant/antifreeze, extended life
- Counterweight, bumper
- Dome light (cab only)
- Diagnostic port for engine, machine and gauge cluster Electronic Control Modules
- Differential lock, loader joystick
- Drink holders, two
- Engine, Cat C4.4 ACERT (Direct Injection Turbocharged), meets Tier 4 Final/Stage IV emission standards, selective catalytic reduction, diesel oxidation catalyst (DOC)
- Engine enclosure, sound suppression removal panels
- Face seals, O-ring
- Fan, suction and guard
- Fast reversing shuttle, all gears
- Fenders, rear
- Filters, spin-on: fuel, engine oil, transmission oil, water separator
- Filters, bowl and cartridge: hydraulic fluid
- Flashing hazards/signal lights
- Floor mat
- Fuel tank, fully enclosed
- Fully hinged front grill for cooling package cleaning access
- Gauge cluster: coolant temperature, fuel level, torque converter temperature, DEF level
- Ground level fuel fill and DEF fill
- High ambient cooling package
- Hood lock, inside cab
- Hydraulic hose, XT™
- Hydraulic oil cooler
- Hydraulic oil level sight gauge
- Hydraulic valve, hydrostatic steering
- Hydraulic valves, loader 2 function
- Hydraulic valves, backhoe 5 function
- Hydraulics, load sensing with variable displacement piston pump
- Indicator lights: wait to start, water in fuel, engine warning, warning lamp, emissions module malfunction, low battery/charging system warning, high hydraulic oil temperature: LCD warnings: engine oil pressure, machine locked, service due, air filter blocked, high coolant temperature, auto idle shutdown, high torque converter temperature, hydraulic filter bypass
- Instrument panel lights
- Joystick controls: pilot operated, excavator-style with pattern changer
- Key start/stop system
- LCD screen: engine speed, hour meter, gear/direction, battery voltage, hydraulic oil temperature, torque converter temperature, coolant temperature, trip totals (fuel and hours), lifetime totals (fuel and hours), operator settings (units, brightness, programmable hoe auxiliary flow), service mode diagnostics, maintenance intervals, ECM/system info
- Lights, working (4 front, 4 rear)
- Loader, self-leveling, return-to-dig and transmission disconnect switch
- Loader, single tilt
- Mirror, rearview
- One-touch low idle
- Open circuit breather
- Pattern changer, in cab
- Power receptacle, 12 volt, 2 internal, 1 external
- Power steering, hydrostatic
- Radio ready cab
- Seat belt, retractable, 51 mm (2 in)
- Socket, two roof
- Stabilizer shoes, street
- Steering knob
- Seat, air suspension, fabric or vinyl cover, with armrest
- Starting system, glow plugs
- Steering, hydrostatic
- Storage compartment, lockable
- Storage tray
- Stop and tail lights
- Swing transport lock
- Tilt steering wheel
- Tires
- Toolbox, external, lockable
- Torque converter
- Throttle, hand and foot, electronic
- Transmission, four speed, syncromesh
- Transmission neutralizer switch
- Transport tie-downs
- Two Wheel Drive
- Vandalism locks, four
- Warning horn, electric



# 420F2/420F2 IT Backhoe Loader

## OPTIONAL EQUIPMENT

- Battery, additional, 880 CCA
- Cab, deluxe
- Cold weather fuel (-30° C/-22° F)
- Cold weather package, including additional battery, engine block heater, radiator antifreeze, cold weather fuel (-30° C/-22° F) and mounting for an ether bottle
- Counterweights, 115 kg (255 lb), 240 kg (530 lb) or 460 kg (1,015 lb)
- Fenders, front with integral steps
- Four Wheel Drive
- Guard, boom protection plate
- Guard, stabilizer, rock
- Hydraulic valves, loader with auxiliary roller thumb control (3rd valve for GP, MP or Quick Coupler)
- Hydraulic valves, backhoe 6 function
- Hydraulic lines, combined function auxiliary
- Loader, IT with Quick Coupler and pilot loader control
- Product Link™, satellite, PL631E
- Product Link, cellular, PL641I
- Quick Coupler, hydraulic, dual lock
- Quick Coupler, manual, dual lock
- Quick Coupler, pin lock
- Radio and CD player
- Radio and CD player, Bluetooth
- Ride Control
- Rotating beacon, magnetic mount
- Seat belt, 75 mm (3 in)
- Security system keypad
- Stabilizer pads, reversible
- Stick, extendible
- Storage box
- Transmission, AutoShift
- Transmission, AutoShift with lock-up torque converter
- Vandalism protection, gauge cover
- Work Tool Attachments such as buckets, forks, material handling arms, augers, hammers, brooms, cold planers and vibratory plate compactors. See your Cat dealer for more information.

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://www.cat.com)

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# Cat® 430F2/430F2 IT

## BACKHOE LOADER

The Cat® 430F2 and 430F2 IT Backhoe Loaders deliver performance, increased fuel efficiency, superior hydraulic system, versatility and an all new operator station. The 430F2 and 430F2 IT feature the following:

- **Ergonomic Operator Station** – Ample legroom inside the cab makes rotating the seat simple. The air suspension seat provides comfort to the operator while loading. New backhoe control pods allow for unlimited adjustability.
- **Load Sensing Hydraulics** – The Cat Backhoe Loader's load sensing piston pump provides full hydraulic lifting and digging forces at any engine speed. Variable flow pump matches hydraulic power to work demands.
- **Machine Performance** – The Cat C4.4 ACERT™ engine delivers solid performance and meets U.S. EPA Tier 4 Final/EU Stage IV emission standards by utilizing Selective Catalytic Reduction technology with a diesel oxidation catalyst. The system allows the operator to disconnect the machine, even while the diesel exhaust fluid is being purged from the system.
- **Machine Versatility** – A broad range of performance matched Cat Work Tools make the Cat Backhoe Loader the most versatile machine on the job site. All Backhoe Loaders have standard thumb ready sticks. The Integrated Tool Carrier (IT Loader) provides versatility and allows quick connection to a variety of Cat Work Tools.
- **Dual Lock Coupler** – Cat dual lock coupler is available from the factory with either mechanical or hydraulic operation. The coupler makes work tool changes quick and easy.

## Specifications

### Engine

Engine Model	Cat C4.4 ACERT	
Gross Power		
SAE J1995	87 kW	117 hp
ISO 14396	86 kW	115 hp
Rated Net Power @ 2,200 rpm		
SAE J1349	80 kW	108 hp
ISO 9249	81 kW	109 hp
EEC 80/1269	81 kW	109 hp
Net Peak Power @ 1,800 rpm		
SAE J1349	82 kW	110 hp
ISO 9249	83 kW	111 hp
EEC 80/1269	83 kW	111 hp
Bore	105 mm	4.13 in
Stroke	127 mm	5 in
Displacement	4.4 L	268 in³
Net Torque Rise @ 1,400 rpm	39%	
SAE J1349	488 N-m	360 lbf-ft

- Engine meets Tier 4 Final/Stage IV emission standards.

### Weights\*

Operating Weight – Nominal	8330 kg	18,364 lb
Operating Weight – Maximum	11 000 kg	24,251 lb
Cab, ROPS/FOPS	163 kg	359 lb
AutoShift Transmission	238 kg	525 lb
Ride Control	14 kg	31 lb
Air Conditioning	42 kg	93 lb
MP Bucket (0.96 m³/1.25 yd³) (no forks or teeth)	745 kg	1,642 lb
Loader, IT with Quick Coupler	317 kg	699 lb
Extendible Stick	305 kg	673 lb
Counterweights (Option 1)	115 kg	255 lb
Counterweights (Option 2)	240 kg	530 lb
Counterweights (Option 3)	460 kg	1,015 lb

\*Specifications shown are for machine equipped with 1.0 m³ (1.31 yd³) general purpose loader bucket, 610 mm (24 in) standard duty backhoe bucket, 460 kg (1,015 lb) counterweight, all wheel drive, 80 kg (176 lb) operator and full fuel tank.



# 430F2/430F2 IT Backhoe Loader

## Transmission

### Power Shuttle Transmission – Standard

Forward – 1st	5.4 km/h	3.4 mph
2nd	9.0 km/h	5.6 mph
3rd	21 km/h	13 mph
4th	40 km/h	25 mph
Reverse – 1st	5.4 km/h	3.4 mph
2nd	9.0 km/h	5.6 mph
3rd	21 km/h	13 mph
4th	40 km/h	25 mph

### AutoShift Transmission – Optional

### AutoShift Transmission with Lock-Up Torque Converter – Optional

Forward – 1st	5.8 km/h	3.6 mph	5.8 km/h	3.6 mph
2nd	9.3 km/h	5.7 mph	9.3 km/h	5.7 mph
3rd	12 km/h	8 mph	12 km/h	8 mph
4th	19 km/h	12 mph	19 km/h	12 mph
5th	26 km/h	16 mph	23 km/h	14 mph
5th LUC	—	—	25 km/h	15 mph
6th	40 km/h	25 mph	40 km/h	25 mph
Reverse – 1st	5.8 km/h	3.6 mph	5.8 km/h	3.6 mph
2nd	12 km/h	7.6 mph	12 km/h	7.6 mph
3rd	28 km/h	17 mph	28 km/h	17 mph

## Axle Ratings

### Front Axle, 2WD

Static	22 964 kg	50,582 lb
Dynamic	9186 kg	20,233 lb

### Front Axle, 4WD

Static	22 964 kg	50,582 lb
Dynamic	9186 kg	20,233 lb

### Rear Axle

Static	22 964 kg	50,582 lb
Dynamic	9186 kg	20,233 lb

## Hydraulic System

Type	Closed Center	
Pump Type	Variable Flow, Axial Piston	
Pump Capacity @ 2,200 rpm	163 L/min	43 gal/min
System Pressure – Backhoe	25 000 kPa	3,600 psi
System Pressure – Loader	25 000 kPa	3,600 psi

## Steering

Type	Front Wheel	
Power Steering	Hydrostatic	
Bore	65 mm	2.6 in
Stroke	120 mm	4.7 in
Rod Diameter	36 mm	1.4 in
Axle Oscillation	11°	
Turning Circle – 2WD/4WD (inner wheel not braked)		
Outside, Front Wheels	8.18 m	26'10"
Outside, Widest Loading Bucket	10.97 m	36'0"

## Service Refill Capacities

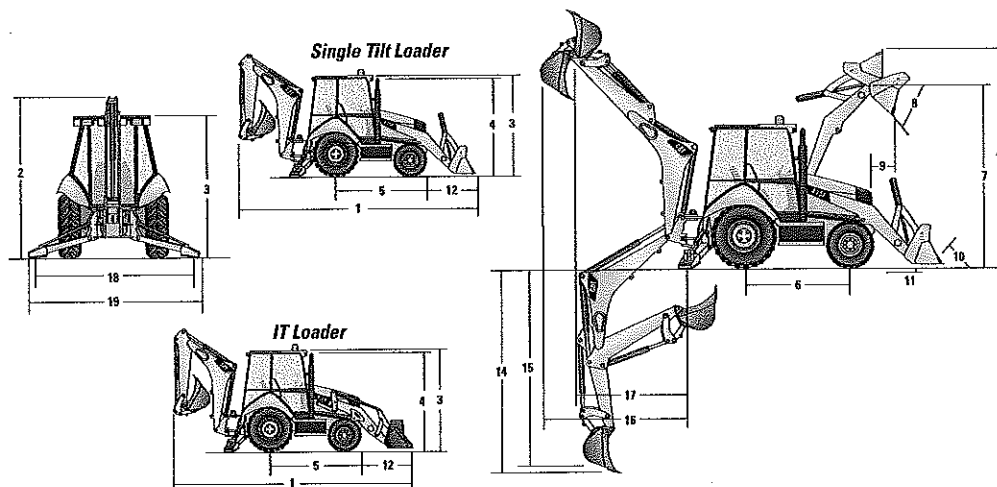
Cooling System with Air Conditioning	22.5 L	5.9 gal
Fuel Tank	160 L	42 gal
Diesel Exhaust Fluid	19 L	5.0 gal
Engine Oil with Filter	8.8 L	2.3 gal
Transmission – Power Shuttle		
4WD	15.0 L	4.0 gal
Transmission – AutoShift		
4WD	18.0 L	4.8 gal
Rear Axle	16.5 L	4.4 gal
Planetaries	1.7 L	0.4 gal
Front Axle (4WD)	11.0 L	2.9 gal
Planetaries	0.7 L	0.2 gal
Hydraulic System	95.0 L	25.1 gal
Hydraulic Tank	40.0 L	10.6 gal

- Requires ultra-low sulfur fuel <= 15 ppm fuel sulfur

## Tires

Choices listed as combination of front/rear tires:

- 12.5/80-18 (12 ply) 1-3/19.5L-24 (12 ply) ATU
- 12.5/80-18 NHS (12 ply) 1-3/21L-24 (16 ply) R4 ATU
- 340/80R 18/19.5L-24 (12 ply) R4 ATU
- 340/80R 18/500/70R 24 RT



# 430F2/430F2 IT Backhoe Loader

## Dimensions

	Single Tilt Loader				IT Loader with Quick Coupler			
	0.96 m³ (1.25 yd³) GP Bucket		1.00 m³ (1.31 yd³) MP Bucket		0.96 m³ (1.25 yd³) GP Bucket		1.00 m³ (1.31 yd³) MP Bucket	
1 Overall Length (Loader on Ground) – Standard Stick	7282 mm	23'11"	7200 mm	23'7"	7430 mm	24'5"	7338 mm	24'1"
Overall Length (Loader on Ground) – Extendible Stick	7298 mm	23'11"	7216 mm	23'8"	7446 mm	24'5"	7354 mm	24'2"
Overall Transport Length – Standard Stick	7310 mm	24'0"	7274 mm	23'10"	7423 mm	24'4"	7352 mm	24'1"
Overall Transport Length – Extendible Stick	7327 mm	24'0"	7290 mm	23'11"	7440 mm	24'5"	7369 mm	24'2"
2 Overall Transport Height – Standard Stick	3577 mm	11'9"	3577 mm	11'9"	3577 mm	11'9"	3577 mm	11'9"
Overall Transport Height – Extendible Stick	3631 mm	11'11"	3631 mm	11'11"	3631 mm	11'11"	3631 mm	11'11"
Overall Width	2322 mm	7'7"	2322 mm	7'7"	2322 mm	7'7"	2322 mm	7'7"
3 Height to Top of Cab/Canopy	2819 mm	9'3"	2819 mm	9'3"	2819 mm	9'3"	2819 mm	9'3"
4 Height to Top of Exhaust Stack	2744 mm	9'0"	2744 mm	9'0"	2744 mm	9'0"	2744 mm	9'0"
Height to Loader Hinge Pin (Transport)	381 mm	1'3"	432 mm	1'5"	396 mm	1'4"	386 mm	1'3"
Ground Clearance (minimum)	294 mm	1'0"	294 mm	1'0"	294 mm	1'0"	294 mm	1'0"
5 Rear Axle Centerline to Front Grill	2705 mm	8'10"	2705 mm	8'10"	2705 mm	8'10"	2705 mm	8'10"
Front Wheel Tread Gauge	1895 mm	6'3"	1895 mm	6'3"	1895 mm	6'3"	1895 mm	6'3"
Rear Wheel Tread Gauge	1714 mm	5'7"	1714 mm	5'7"	1714 mm	5'7"	1714 mm	5'7"
6 Wheelbase 2WD/4WD	2200 mm	7'3"	2200 mm	7'3"	2200 mm	7'3"	2200 mm	7'3"

## Loader Bucket Dimensions and Performance

	Single Tilt Loader				IT Loader with Quick Coupler			
	0.96 m³ (1.25 yd³) GP Bucket		1.00 m³ (1.31 yd³) MP Bucket		0.96 m³ (1.25 yd³) GP Bucket		1.00 m³ (1.31 yd³) MP Bucket	
Capacity (SAE Rated)	0.96 m³	1.25 yd³	1.00 m³	1.31 yd³	0.96 m³	1.25 yd³	1.00 m³	1.31 yd³
Overall Bucket Width	2262 mm	89 in	2279 mm	90 in	2262 mm	89 in	2279 mm	90 in
Lift Capacity at Maximum Height	3283 kg	7,237 lb	3097 kg	6,828 lb	3716 kg	8,193 lb	3448 kg	7,601 lb
Lift Breakout Force	49 809 N	11,197 lbf	49 019 N	11,020 lbf	51 085 N	11,484 lbf	49 452 N	11,117 lbf
Tilt Breakout Force	50 190 N	11,283 lbf	57 555 N	12,938 lbf	46 286 N	10,405 lbf	50 349 N	11,318 lbf
Tipping Load at Breakout Point	6914 kg	15,243 lb	7011 kg	15,456 lb	6218 kg	13,709 lb	6309 kg	13,909 lb
7 Maximum Hinge Pin Height	3474 mm	11'5"	3474 mm	11'5"	3490 mm	11'5"	3490 mm	11'5"
8 Dump Angle at Full Height	44°		44°		44°		44°	
Dump Height at Maximum Angle	2746 mm	9'0"	2798 mm	9'2"	2679 mm	8'9"	2745 mm	9'0"
9 Dump Reach at Maximum Angle	808 mm	2'8"	716 mm	2'4"	869 mm	2'10"	814 mm	2'8"
10 Maximum Bucket Rollback at Ground Level	37°		38°		40°		39°	
11 Digging Depth	83 mm	3"	110 mm	4"	105 mm	4"	95 mm	4"
Maximum Grading Angle	112°		116°		110°		112°	
Width of Dozer Cutting Edge	N/A		2262 mm	7'5"	N/A		2262 mm	7'5"
12 Grill to Bucket Cutting Edge, Carry Position	1487 mm	4'11"	1451 mm	4'9"	1600 mm	5'3"	1529 mm	5'0"
13 Maximum Operating Height	4355 mm	14'3"	4404 mm	14'5"	4407 mm	14'6"	4480 mm	14'8"
Jaw Opening Maximum	N/A		790 mm	2'7"	N/A		790 mm	2'7"
Bucket Jaw Clamping Force	N/A		55 700 N	12,521 lbf	N/A		55 700 N	12,521 lbf
Weight (does not include teeth or forks)	451 kg	994 lb	745 kg	1,642 lb	447 kg	985 lb	724 kg	1,596 lb

## Backhoe Dimensions and Performance

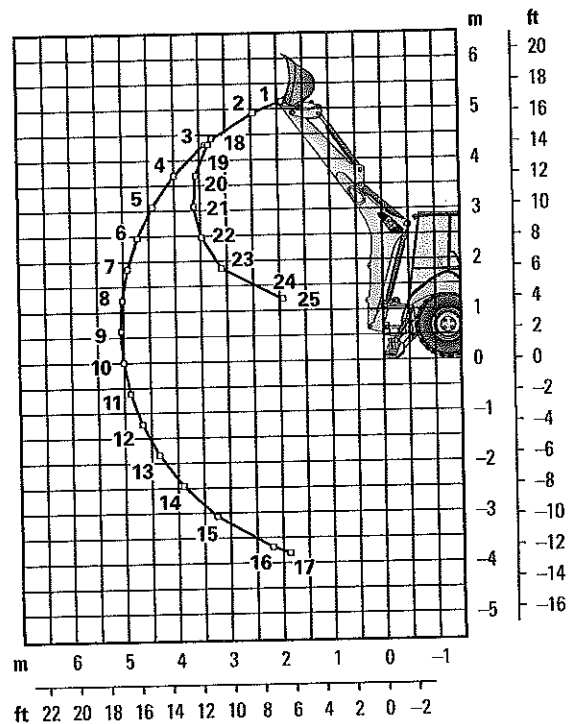
	Standard Stick		E-Stick Retracted		E-Stick Extended	
14 Digging Depth, SAE (max.)	4686 mm	15'4"	4795 mm	15'9"	5935 mm	19'6"
15 Digging Depth, 610 mm (2 ft) Flat Bottom	4660 mm	15'3"	4766 mm	15'8"	5906 mm	19'5"
Reach from Rear Axle Centerline at Ground Line	7133 mm	23'6"	7227 mm	23'10"	8316 mm	27'5"
16 Reach from Swing Pivot at Ground Line	6043 mm	19'10"	6137 mm	20'2"	7226 mm	23'9"
Maximum Operating Height	6007 mm	19'9"	6075 mm	20'0"	6958 mm	22'11"
Loading Height	3961 mm	13'0"	3921 mm	12'10"	4533 mm	14'10"
17 Loading Reach	1855 mm	6'1"	2022 mm	6'8"	3003 mm	9'10"
Swing Arc	180°		180°		180°	
Bucket Rotation	205°		205°		205°	
18 Stabilizer Spread, Operating Position (center)	3310 mm	10'10"	3310 mm	10'10"	3310 mm	10'10"
Stabilizer Spread, Operating Position (outside)	3770 mm	12'4"	3770 mm	12'4"	3770 mm	12'4"
Stabilizer Spread, Transport Position	2322 mm	7'7"	2322 mm	7'7"	2322 mm	7'7"
Bucket Dig Force	71 864 N	16,156 lbf	70 870 N	15,932 lbf	70 870 N	15,932 lbf
Stick Dig Force	44 778 N	10,067 lbf	43 841 N	9,856 lbf	32 414 N	7,287 lbf

# 430F2/430F2 IT Backhoe Loader

## Backhoe Lift Capacity

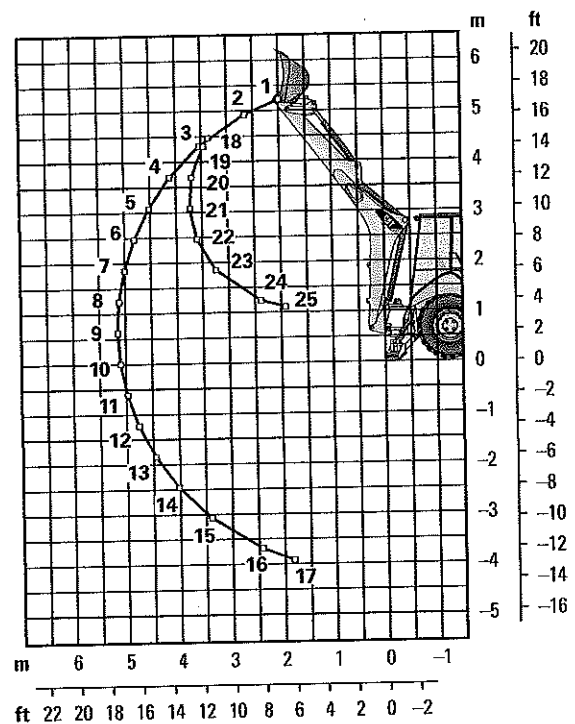
### Cat 430F2/430F2 IT Standard Stick

Boom Lifting		kg	lb
1		1508	3,318
2		1782	3,921
3		1936	4,258
4		1925	4,236
5		1878	4,131
6		1819	4,001
7		1757	3,866
8		1698	3,735
9		1641	3,610
10		1588	3,493
11		1539	3,387
12		1496	3,291
13		1459	3,211
14		1432	3,151
15		1425	3,136
16		1503	3,307
17		1573	3,461
Stick Lifting		kg	lb
18		2453	5,397
19		2636	5,800
20		2830	6,226
21		2773	6,100
22		2906	6,394
23		3367	7,408
24		6152	13,535
25		6240	13,728



### Cat 430F2/430F2 IT Extendible Stick – Retracted

Boom Lifting		kg	lb
1		1250	2,751
2		1541	3,391
3		1663	3,659
4		1654	3,639
5		1610	3,542
6		1555	3,421
7		1497	3,294
8		1441	3,169
9		1386	3,049
10		1335	2,936
11		1287	2,832
12		1244	2,738
13		1207	2,656
14		1178	2,593
15		1166	2,565
16		1211	2,665
17		1316	2,896
Stick Lifting		kg	lb
18		2158	4,747
19		2367	5,208
20		2538	5,583
21		2486	5,469
22		2599	5,719
23		2979	6,553
24		4516	9,934
25		6083	13,382



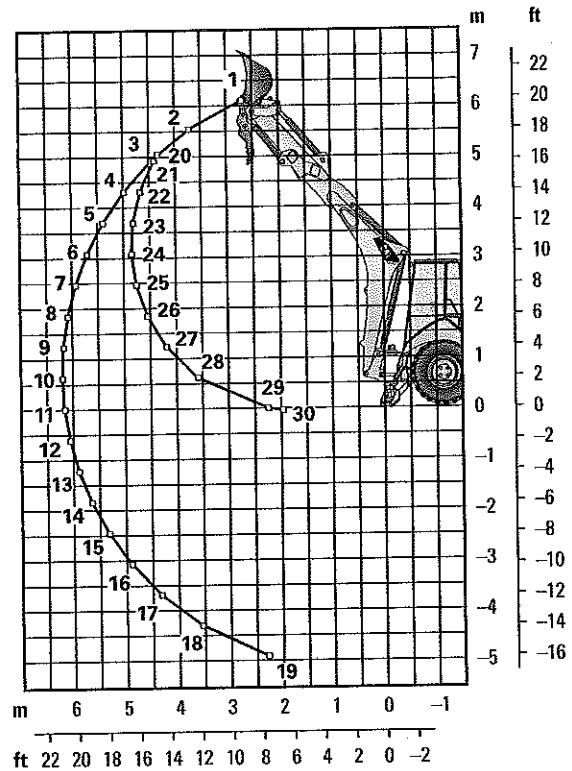
Lift Capacities are over-end values. Machine equipped with 4WD, OROPS, 0.96 m<sup>3</sup> (1.25 yd<sup>3</sup>) general purpose bucket, and no counterweight. Extendible stick includes 460 kg (1,015 lb) counterweight.

# 430F2/430F2 IT Backhoe Loader

## Backhoe Lift Capacity

### Cat 430F2/430F2 IT Extendible Stick – Extended

Boom Lifting		kg	lb
1		679	1,493
2		1017	2,237
3		1124	2,474
4		1158	2,547
5		1167	2,553
6		1149	2,527
7		1129	2,484
8		1106	2,433
9		1081	2,378
10		1056	2,323
11		1032	2,270
12		1009	2,220
13		989	2,176
14		972	2,138
15		959	2,111
16		954	2,100
17		963	2,119
18		1005	2,210
19		1211	2,663
Stick Lifting		kg	lb
20		1197	2,633
21		1277	2,810
22		1565	3,444
23		1735	3,817
24		1715	3,774
25		1753	3,856
26		1860	4,092
27		2079	4,575
28		2563	5,638
29		4910	10,802
30		5883	12,943



Lift Capacities are over-end values. Machine equipped with 4WD, OROPS, 0.96 m<sup>3</sup> (1.25 yd<sup>3</sup>) general purpose bucket, and no counterweight. Extendible stick includes 460 kg (1,015 lb) counterweight.

# 430F2/430F2 IT Backhoe Loader

## Counterweights (Minimum Counterweight Recommendations)

### Standard Stick

Loader Bucket	Power Train	Single-Tilt		IT Loader w/QC	
		kg	lb	kg	lb
GP	4WD	240	530	no counterweight	
MP	4WD	no counterweight		no counterweight	
Forks	4WD	N/A	N/A	no counterweight	
Material Handling Arm	4WD	N/A	N/A	no counterweight	

### Extendible Stick

Loader Bucket	Power Train	Single-Tilt		IT Loader w/QC	
		kg	lb	kg	lb
GP	4WD	460	1,015	240	530
MP	4WD	240	530	no counterweight	
Forks	4WD	N/A	N/A	240	530
Material Handling Arm	4WD	N/A	N/A	240	530

## Backhoe Buckets (With weld on adapters and pin-on teeth)

### Standard Duty

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	80	2.8	111	245	3
457	18	120	4.2	122	268	4
610	24	180	6.4	141	311	5
762	30	230	8.1	157	345	5
914	36	290	10.2	176	388	6

### Heavy Duty

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	80	2.8	121	266	3
406	16	110	3.9	128	282	3
457	18	120	4.2	135	299	4
610	24	180	6.4	151	333	5
762	30	230	8.1	177	391	5
914	36	290	10.2	201	443	6

### Soil Excavation

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
457	18	180	6.4	155	341	4
610	24	240	8.5	182	402	5
762	30	320	11.3	206	454	5
914	36	380	13.4	233	513	6

### Heavy Duty Rock

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	70	2.5	127	279	3
457	18	130	4.6	146	322	4
610	24	200	7.1	174	384	5
762	30	270	9.5	197	434	5
914	36	330	11.7	224	493	6

### Coral

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	60	2.1	134	295	4
457	18	100	3.5	155	341	6
610	24	140	4.9	182	402	8
762	30	190	6.7	210	463	10

### Heavy Duty – Pin Lock

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	96	3.4	113	249	3
406	16	123	4.3	131	288	3
457	18	139	4.9	139	307	4
610	24	207	7.3	168	370	5
762	30	275	9.7	194	428	5
914	36	345	12.2	224	494	6

### High Capacity – Pin Lock

Width		Rated Capacity		Weight		No. of Teeth
mm	in	L	ft³	kg	lb	
305	12	96	4.6	113	287	3
406	16	123	5.6	131	327	3
457	18	139	6.5	139	346	4
610	24	207	9.6	168	414	5
762	30	275	12.9	194	475	5
914	36	345	16.2	224	543	6



# 430F2/430F2 IT Backhoe Loader

## STANDARD EQUIPMENT

- Adjustable auxiliary controls, backhoe loader
- Air cleaner
- Alarm, back-up
- Audible system fault alarm
- Automatic Engine Speed Control (AESC)
- Battery, maintenance-free, 880 CCA
- Battery disconnect switch
- Battery remote jumpstart
- Boom transport lock
- Brace, lift cylinder
- Brake, secondary parking
- Brakes, hydraulically boosted, oil disc, dual pedals, interlocking
- Bucket level indicator
- Canopy, ROPS/FOPS
- Cat cushion swing system
- Coat restraint
- Coolant/antifreeze, extended life
- Counterweight, bumper
- Dome light (cab only)
- Diagnostic port for engine, machine and gauge cluster Electronic Control Modules
- Differential lock, loader joystick
- Drink holders, two
- Engine, Cat C4.4 ACERT (Direct Injection Turbocharged), meets Tier 4 Final/Stage IV emission standards, selective catalytic reduction, diesel oxidation catalyst (DOC)
- Engine enclosure, sound suppression removal panels
- Face seals, O-ring
- Fan, suction and guard
- Fast reversing shuttle, all gears
- Fenders, rear
- Filters, spin-on: fuel, engine oil, transmission oil, water separator
- Filters, bowl and cartridge: hydraulic fluid
- Flashing hazards/signal lights
- Floor mat
- Fuel tank, fully enclosed
- Four Wheel Drive
- Fully hinged front grill for cooling package cleaning access
- Gauge cluster: coolant temperature, fuel level, torque converter temperature, DEF level
- Ground level fuel fill and DEF fill
- High ambient cooling package
- Hood lock, inside cab
- Hydraulic hose, XT™
- Hydraulic oil cooler
- Hydraulic valve, hydrostatic steering
- Hydraulic valves, loader 2 function
- Hydraulic valves, backhoe 5 function
- Hydraulics, load sensing with variable displacement piston pump
- Indicator lights: wait to start, water in fuel, engine warning, warning lamp, emissions module malfunction, low battery/charging system warning, high hydraulic oil temperature: LCD warnings: engine oil pressure, machine locked, service due, air filter blocked, high coolant temperature, auto idle shutdown, high torque converter temperature, hydraulic filter bypass
- Instrument panel lights
- Joystick controls: pilot operated, excavator-style with pattern changer
- Key start/stop system
- LCD screen: engine speed, hour meter, gear/direction, battery voltage, hydraulic oil temperature, torque converter temperature, coolant temperature, trip totals (fuel and hours), lifetime totals (fuel and hours), operator settings (units, brightness, programmable hoe auxiliary flow), service mode diagnostics, maintenance intervals, ECM/system info
- Lights, working (4 front, 4 rear)
- Loader, self-leveling, return-to-dig and transmission disconnect switch
- Loader, single tilt
- Mirror, rearview
- One-touch low idle
- Open circuit breather
- Pattern changer, in cab
- Power receptacle, 12 volt, 2 internal, 1 external
- Power steering, hydrostatic
- Radio ready cab
- Seat belt, retractable, 51 mm (2 in)
- Socket, two roof
- Stabilizer shoes, street
- Steering knob
- Seat, air suspension, fabric or vinyl cover, with armrest
- Starting system, glow plugs
- Steering, hydrostatic
- Storage compartment, lockable
- Storage tray
- Stop and tail lights
- Swing transport lock
- Tilt steering wheel
- Tires
- Toolbox, external, lockable
- Torque converter
- Throttle, hand and foot, electronic
- Transmission, four speed, synchromesh
- Transmission neutralizer switch
- Transport tie-downs
- Vandalism locks, four
- Warning horn, electric



# 430F2/430F2 IT Backhoe Loader

## OPTIONAL EQUIPMENT

- Battery, additional, 880 CCA
- Cab, deluxe
- Cold weather fuel (-30° C/-22° F)
- Cold weather package, including additional battery, engine block heater, radiator antifreeze, cold weather fuel (-30° C/-22° F) and mounting for an ether bottle
- Counterweights, 115 kg (255 lb), 240 kg (530 lb) or 460 kg (1,015 lb)
- Fenders, front with integral steps
- Guard, boom protection plate
- Guard, stabilizer, rock
- Hydraulic valves, loader with auxiliary roller thumb control (3rd valve for GP, MP or Quick Coupler)
- Hydraulic valves, backhoe 6 function
- Hydraulic lines, combined function auxiliary
- Loader, IT with Quick Coupler and pilot loader control
- Product Link™, satellite, PL631E
- Product Link, cellular, PL6411
- Quick Coupler, hydraulic, dual lock
- Quick Coupler, manual, dual lock
- Quick Coupler, pin lock
- Radio and CD player
- Radio and CD player, Bluetooth
- Ride Control
- Rotating beacon, magnetic mount
- Seat belt, 75 mm (3 in)
- Security system keypad
- Stabilizer pads, reversible
- Stick, extendible
- Storage box
- Transmission, AutoShift
- Transmission, AutoShift with lock-up torque converter
- Vandalism protection, gauge cover
- Work Tool Attachments such as buckets, forks, material handling arms, augers, hammers, brooms, cold planers and vibratory plate compactors. See your Cat dealer for more information.

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://www.cat.com)

AEHQ7380 (12-14)

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# Cat® Hammers

H35Es, H45Es, H55Es, H65Es  
H35E, H45E, H55E, H65E

## FEATURES:

### Built for Your Convenience, Comfort

- Cat® Hammers are designed for optimum performance and integration with your Cat compact construction equipment. They can also be utilized with non-Cat carriers.
- Plug & Perform. No adjustment to pressures or flows is necessary. Ports are positioned for convenient installation on your Cat carrier. Hoses are protected.
- Hammers with fully enclosed housings are silenced with a lower overall noise level for a quieter, safer job site. Side plate constructed housings are also available.
- Tri-suspension system on silenced models guides the power cell and gives manageable, smooth performance. The result is a hammer that's comfortable and responsive to operate.
- Gas-fired operating cycle delivers consistent, reliable performance over time. Hammers are reliable when breaking materials like non-reinforced concrete, asphalt and cinder block.

### Built for Performance, Lasting Value

- Automatic shut-off protects the hammer from blank firing, a key contributor to hammer wear. Internal stresses are reduced providing more productive hours of work. Hammer is protected, regardless of operator skill level.
- Hammers adjust automatically to flows and pressures of your Cat carrier providing top performance and long service life.

- Seal carrier provides maximum gas retention and reliable performance. New design incorporates innovative technology.
- Tri-suspension system on silenced models protects the power cell and assures reliable operation.

### Built for Quick, Easy Maintenance

- Grease point is ergonomically located at standing height making it comfortable and easy to access.
- Tool changes are simple and easily accomplished with common hand tools.
- Power chamber and accumulator pressures can be checked and charged while the hammer is mounted on the machine.
- Single bushing design is slip fit and field-replaceable. One piece provides proper tool alignment.
- Cat hammers are designed to rebuild easily, providing lasting value for your hammer investment.

### Completely Cat®

- E Series hammers bring together your performance, quality, and serviceability expectations alongside our design, manufacturing and logistics experience. E Series hammers are completely Cat: from the inside out.

## Hammer / Machine Compatibility

Skid steer and multi terrain loaders, mini-excavators and backhoe loaders. Contact your Cat dealer for specific machine configurations.

Model	Machines
H35E/Es	301.4, 301.7, 301.8, 302.2, 302.4
H45E/Es	301.7, 301.8, 302.2, 302.4, 302.5, 302.7
H55E/Es	216, 226, 236, 242, 246, 247, 252, 257, 259, 262, 272, 277, 279, 287, 289, 297, 299, 302.5, 302.7, 303.5, 304, 305, 305.5
H65E/Es	216, 226, 236, 242, 246, 247, 252, 257, 259, 262, 272, 277, 279, 287, 289, 297, 299, 303.5, 304, 305, 305.5, 307, 308, 416, 420, 430



Americas North



## Cat Hammers

### Built for Your Convenience



**Fully Enclosed, Silenced**  
housing lowers overall noise level for a quieter, safer job site. Internal power cell is protected. Designed and engineered to eliminate stress points.

**Easy to Tune & Maintain** — Gas ports and valves are easy to check and charge while the hammer is mounted to the machine.

**Standing Height Grease Point** means required maintenance is comfortable and easy to do.

**CAT H65E**



**Tools** are heat-treated, matched to piston diameter and mass to deliver full blow energy.

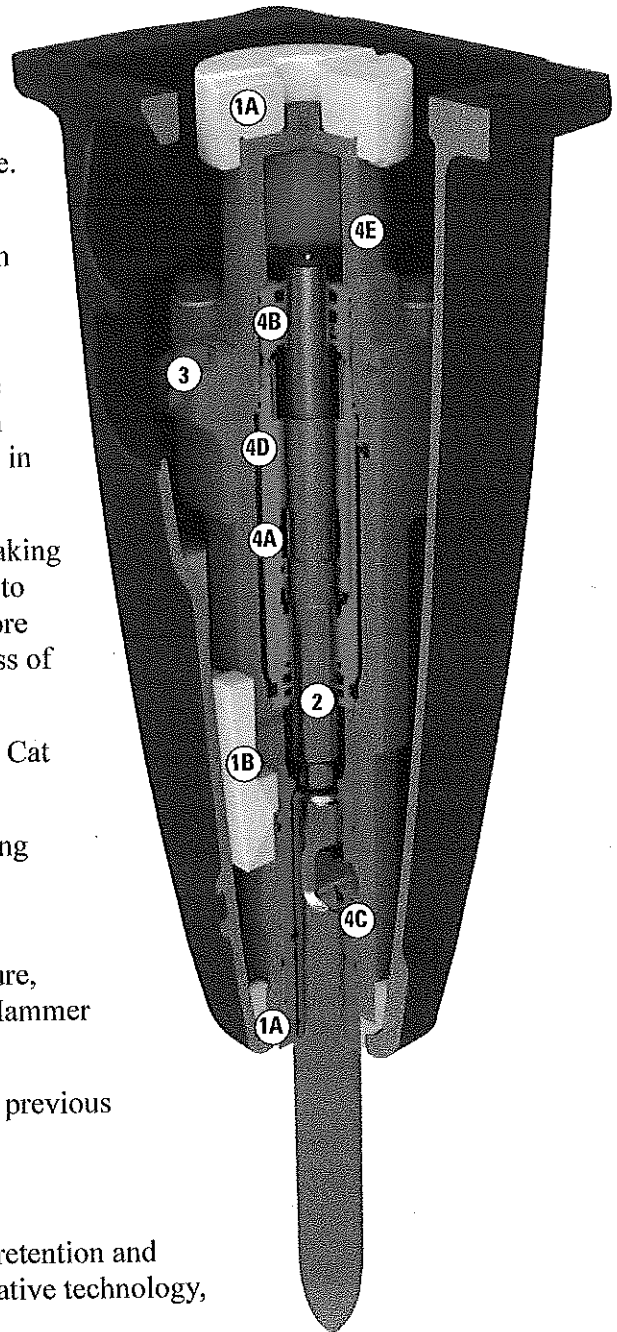
**Non-silenced, side plate housing models are available.**

**Flat top**      **Pin-on**



## Built for Quick & Easy Maintenance, Lasting Value

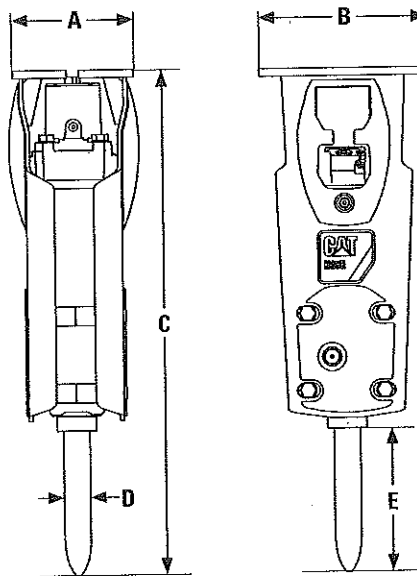
- ① **Tri-Suspension System** – This unique suspension system on the silenced models comprises the suspension jacket, the upper and lower buffers. Suspension aligns the power cell and gives manageable, smooth performance.
  - ①A **Upper & Lower Buffers** – Buffers at both ends of the power cell absorb reflective forces, isolating them from the machine. Result is quiet, reliable operation and reduced operator fatigue.
  - ①B **Suspension Jacket** – The front head is isolated by the two-piece suspension jacket, which dampens vibration and sound. A lower dBA allows the hammer to be used in urban and other noise restricted areas.
- ② **Auto Shut Off (ASO)** – Instantly stops the piston when breaking through material. Prevents blank firing, a key contributor to hammer wear. Internal stresses are reduced, providing more productive hours of work. Hammer is protected, regardless of operator skill level.
- ③ **Plug & Perform** – Designed for convenient installation on Cat machines.
  - ③A **Ports positioned for hose protection** – Improved routing eliminates downtime from breakage.
  - ③B **No adjustment necessary** for hydraulic pressures or flows. Hammer handles full auxiliary flow and pressure, automatically adjusting to match your Cat machine. Hammer over speeding and shortened service are prevented.
- ④ **Simple, Elegant Design** – 47% fewer parts (compared to previous models) provides quick, easy maintenance and service.
  - ④A **Single Piece Piston Sleeve** replaces easily.
  - ④B **Easy-to-remove Seal Carrier** provides maximum gas retention and reliable performance. New design incorporates innovative technology, with five gas retention seals on the power chamber.
  - ④C **Single Bushing Design** is slip fit and field-replaceable. One piece provides proper tool alignment (includes lower and upper bushing and thrust ring).
  - ④D **Integral Accumulator** on H55E/Es and H65E/Es provides additional protection for the machine's hydraulic system.
  - ④E **Valve Body & Front Head** – Power cell is efficiently designed, with only two major components. They are held together by head bolts rather than tie rods. Bolts are simpler to install and service.



# Cat Hammers

## Built to Your Specifications

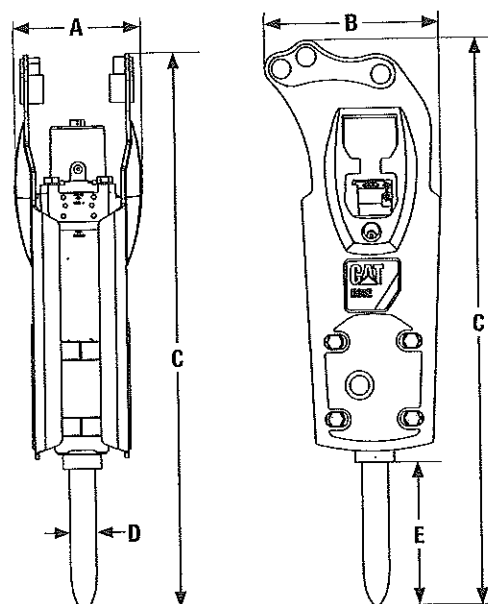
### Flat Top Models



		H35Es	H35E	H45Es	H45E	H55Es
<b>Specifications</b>						
Recommended Carrier	t	1.1–2.4	1.1–2.4	1.5–3.2	1.5–3.2	2.5–6
Weight Range	(lb)	(2,430–5,300)	(2,430–5,300)	(3,310–7,060)	(3,310–7,060)	(5,500–13,200)
Operating Weight Range*	kg	125–130	125–130	145–250	145–250	260–345
	(lb)	(276–287)	(276–287)	(320–551)	(320–551)	(573–761)
Impact Frequency	blows/min.	600–1,800	600–1,800	780–1,800	780–1,800	600–1,680
Energy Class	J	407	407	542	542	813
	(ft-lb)	(300)	(300)	(400)	(400)	(600)
Rated Flow	lpm	12–35	12–35	25–62	25–62	30–85
	(gpm)	(3.2–9.2)	(3.2–9.2)	(6.6–16)	(6.6–16)	(7.9–22)
Operating Pressure, maximum	kPa	16,500	16,500	17,000	17,000	16,500
	(psi)	(2,393)	(2,393)	(2,465)	(2,465)	(2,393)
<b>Dimensions</b>						
A Width	mm	300	284	300	296	346
	(in)	(11.81)	(11.17)	(11.81)	(11.65)	(13.62)
B Length	mm	311	345	311	345	451
	(in)	(12.22)	(13.58)	(12.22)	(13.58)	(17.76)
C Height	mm	860	871	1,006	1,017	1,108
	(in)	(33.86)	(34.29)	(39.61)	(40.04)	(43.62)
D Tool Diameter, top	mm	40	40	50	50	58
	(in)	(1.57)	(1.57)	(1.97)	(1.97)	(2.28)
E Tool Working Length	mm	240	240	269	269	324
	(in)	(9.45)	(9.45)	(10.59)	(10.59)	(12.76)

## Built to Your Needs

### Pin-on Models



		H55E	H55E*	H65Es	H65E	H65E*
<b>Specifications</b>						
Recommended Carrier Weight Range	t (lb)	2.5–6 (5,500–13,200)	2.5–6 (5,500–13,200)	3–9 (6,600–19,800)	3–9 (6,600–19,800)	3–9 (6,610–19,800)
Operating Weight Range*	kg (lb)	250–340 (551–750)	220–315 (485–695)	315–390 (695–860)	305–380 (673–838)	260–355 (573–783)
Impact Frequency	blows/min.	600–1,680	600–1,680	720–1,740	720–1,740	720–1,740
Energy Class	J (ft-lb)	813 (600)	813 (600)	1,085 (800)	1,085 (800)	1,085 (800)
Rated Flow	lpm (gpm)	30–85 (7.9–22)	30–85 (7.9–22)	40–115 (10–30)	40–115 (10–30)	40–115 (10–30)
Operating Pressure, maximum	kPa (psi)	16,500 (2,393)	16,500 (2,393)	16,500 (2,393)	16,500 (2,393)	16,500 (2,393)
<b>Dimensions</b>						
A Width	mm (in)	328 (12.91)	333 (13.09)	345 (13.06)	332 (13.07)	337 (13.26)
B Length	mm (in)	445 (17.52)	344 (13.56)	451 (17.76)	445 (17.52)	453 (17.83)
C Height	mm (in)	1,156 (45.51)	1,323 (52.08)	1,324 (52.13)	1,306 (51.43)	1,454 (57.23)
D Tool Diameter, top	mm (in)	58 (2.28)	58 (2.28)	68 (2.68)	68 (2.68)	68 (2.68)
E Tool Working Length	mm (in)	324 (12.76)	324 (12.76)	371 (14.61)	371 (14.61)	371 (14.61)

\* Pin-on model



# Cat Hammers

## Built for Your Construction & Demolition Projects...

Hammers of this size excel at breaking cinder block, brick, asphalt and pavement extending the use of your smaller building and construction equipment into site prep and light demolition work. Contact your local Cat dealer to see the complete line of Cat hammers for your larger equipment. Tackle reinforced concrete and rock breaking for your heavy demolition, mining and quarry projects.

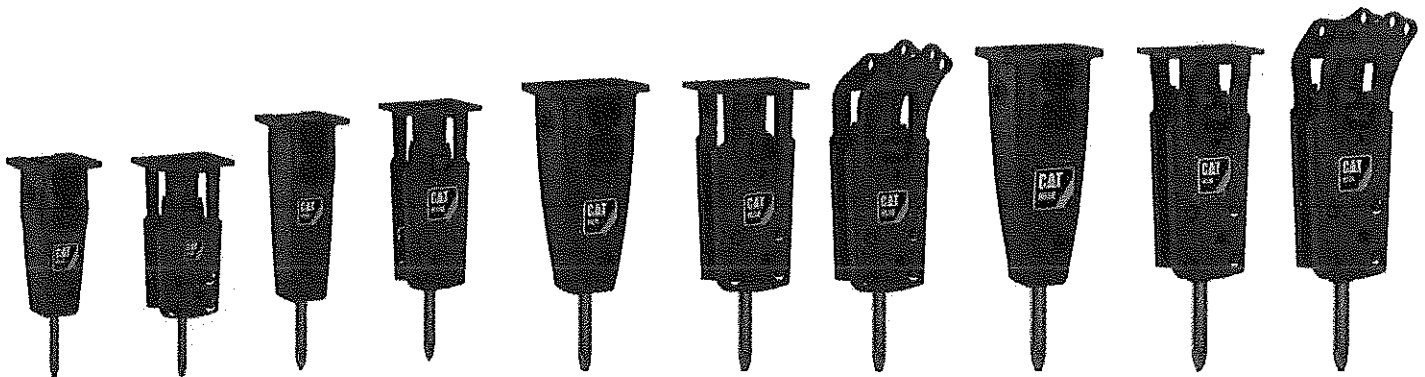
### APPLICATIONS

			Mini-Excavator		Skid Steer & Multi Terrain Loader	
			H35E/Es	H45E/Es	H55E/Es	Backhoe Loader H65E/Es
<b>Construction</b>						
Site prep, Landscaping	Ground excavation	Pipelines, municipalities				
		Frozen ground				
	Asphalt cutting	Driveways, roads				
	Compaction	Municipalities				
<b>Demolition</b>						
Concrete	Light	Sidewalks, driveways				
	Standard	Reinforced concrete 3"-20"				
Masonry	Cinder block, brick	Walls				
Pavement	Asphalt breaking	Driveways, roads				
	Concrete, composite	Roads				
<b>Metallurgical</b>						
Cleaning		Refractory linings in furnaces				

### PRODUCTIVITY RATES

Production rates listed are for an 8-hour shift. They are for general estimation purposes only. Actual working results may vary.

Hammer Model	Non-Reinforced Concrete	
	m <sup>3</sup>	yd <sup>3</sup>
H35E/Es	6-12	(8-16)
H45E/Es	8-18	(10-23)
H55E/Es	14-23	(18-30)
H65E/Es	45-90	(34-69)



## Cat Hammers

For more information on the variety  
of Work Tool attachments available  
contact your local Cat dealer.

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at  
**[www.cat.com](http://www.cat.com)**

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GEHP0204 (08-13)  
Replaces YEKN0350





# Summary

## Specifications

### Cat H75E s vs. Competitors

Model	Impact Frequency	Oil Flow		Operating Weight*		Operating Pressure		Carrier Weight Range		Tool Diameter	
	bpm	lpm	(gpm)	kg	(lb)	kPa	(psi)	t	(lb)	mm	(in)
Cat H75E s	840-1,650	70-130	(18-34)	500	(1,103)	14,500-17,200	(2,100-2,500)	6-10	(13,230-22,050)	74.5	(2.9)
FRD (Kent) F6 Qt	650-1500	50-150	(13-40)	434	(958)	10,000-16,000	(1,450-2,320)	5.4-6.4	(12,000-14,000)	76.2	(3.0)
NPK GH3	500-1,150	45-98	(12-26)	363	(800)	13,100	(1,900)	4-7	(8,800-16,500)	76.2	(3.0)
Allied/Sandvik BR777	500-1,700	42-121	(11-32)	370	(816)	8,963-14,003	(1,300-2,031)	4.6-9.0	(10,100-19,800)	71.1	(2.8)

\* Operating weight includes hammer, standard tool and a bracket based on machine configuration.

### Cat H95E s vs. Competitors

Model	Impact Frequency	Oil Flow		Operating Weight*		Operating Pressure		Carrier Weight Range		Tool Diameter	
	bpm	lpm	(gpm)	kg	(lb)	kPa	(psi)	t	(lb)	mm	(in)
Cat H95E s	700-1,260	70-150	(18-40)	627	(1,382)	14,500-17,200	(2,100-2,500)	7-14	(15,435-30,870)	87.5	(3.4)
FRD (Kent) F9 Qt	700-1,260	65-114	(17-30)	636	(1,403)	12,000-15,000	(1,700-2,150)	6.4-9.1	(14,000-20,000)	90.0	(3.5)
NPK GH4	400-1,050	49-121	(13-32)	567	(1,250)	15,168	(2,200)	6.5-11	(14,300-24,200)	86.4	(3.4)
Allied/Sandvik BR999	500-1,700	49-151	(13-40)	505	(1,113)	9,997-14,003	(1,450-2,031)	7-12.5	(15,400-27,600)	88.9	(3.5)

\* Operating weight includes hammer, standard tool and a bracket based on machine configuration.

### Feature Comparison *ALL Hammers*

	Cat	FRD (Kent)	NPK	Allied/Sandvik
Gas-Fired	•	•	•	
Cylinder Sleeve	•*		•**	•*
No tie rods	•			•
Auto Shut-Off	•			
Protected Power Cell	•	◆		•
Silencing	•	◆		•
Vibration Isolation	•	◆		•
Maintenance-Free Nitrogen Charge	•			•
Autolube Ready	•			
Field Serviceable Lower Bushing	•			•
Dual-use Rotatable Lower Bushing	•			

\* Serviceable, but not a wear item.

\*\* Must be replaced as part of scheduled service.

•	Feature Standard
◆	Feature Optional
	Feature Not Available